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Women and Myocardial Infarction:

An Analysis of Care-Pathway Delays

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Women and Myocardial Infarction:

An Analysis of Care-Pathway Delays

Submitted in fulfilment of PhD requirements

2005

Sharon O'Donnell

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Declaration

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S. O'Donnell — 20th May 2005

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Summary

In conditions shared by women and men, the biomedical model of disease assumes that illness-symptoms and outcomes are biologically and socially neutral. Consequently, up until a decade ago, white middle-aged men were the model subjects in most funded cardiac trials, with the assumption that whatever the findings, the results would also hold true for women (Johnson et al 2003, The Lancet 2003). This 'add women and stir' approach has resulted in imbalances in cardiac care and an image of coronary artery disease, which portrays a white middle-aged male as its victim. Moreover, cardiac health care has been designed with the male anatomy and male experience of illness in mind, and health promotional measures have been targeted towards men. The gendering of this disease has also resulted in imbalances in cardiac care and an image of myocardial infarction (MI) that invariably portrays a middle-aged white male as its victim. As such women are less likely to identify themselves as possible MI victims and less likely to take cardio-protective measures (Lockyer & Bury 2002).

Results from international research studies carried out predominantly in the 1990's, demonstrate that women with MI symptoms were more likely to have greater pre-hospital care pathway delays, than their male counterparts (Clarke et al 1994, Magid et al 1997, Brophy et al 1998, Foster & Mallick 1998, Meischke et al 1998, Canto et al 2000, Sheifer et al 2000). Many of these delays were attributed to the failure of women to attribute their 'atypical' symptoms to a cardiac cause. Furthermore, once women entered the health care system, they were likely to receive fewer medical and interventional procedures than are men (Khan et al 1990, Ayanian & Epstein 1991, Mc Gee & Horgan 1992, Khaw 1993, Petticrew et al 1993, Wenger et al 1993, Clarke et al 1994, Laher 2001). Unfortunately, delays in seeking help during MI may adversely affect a patient's opportunity to receive optimum benefits from reperfusion therapies, whilst predisposing her/him to a greater risk of life threatening complications. Additionally, the affording of limited therapeutic treatment opportunities to women, may also limit the survival potential of this group

A paucity of comparative research existed in Ireland, and so little was truly known about the components of delay along the pathway of care for Irish patients with MI, or their treatment opportunities. An examination of MI treatment delays had been recommended in the Irish Cardiovascular Health Strategy (Department of Health & Children 1999), and provided an opportunity to partially correct the knowledge deficit in this area of cardiac care. In an attempt to position gender at the centre of the inquiry, the current study aimed to identify any gender specific care-pathway delays amongst women and men with MI, and in so doing, assisted in gathering the baseline information as recommended by the Department of Health & Children. Additionally, any identified gender-specific delays, would be explored in greater depth.

A feminist methodological stance that placed gender at the centre of the inquiry provided a framework within which the dominant biomedical world-view of women's cardiac health could be challenged. Feminist methodology proposes that women have different ways of knowing and different health experiences to that which has been traditionally cultivated and valued by medical science (Ruzek et al 1997, Oakley 2000). The study incorporated a sequential across-method triangulation approach to data collection. An initial quantitative inquiry was carried out, which included a 1-year prospective Census (Dublin MATHS 2001/2 MI Census) of 890 consecutive MI admissions to six Coronary Care Units (CCU) in Dublin. The main findings from the census suggested that women were more likely than men to experience pre-hospital help-seeking delays than their male counterparts. Furthermore, once they entered the healthcare system women experienced additional delays to MI assessment and treatment opportunities.

A subsequent qualitative inquiry examined the pre-hospital behaviour of twelve women with MI. Findings from in-depth interviews demonstrated that the psychosocial processes influencing the pre-hospital behaviour and experiences of these participants were dynamic and multifaceted. Emerging from the findings were four main themes (1) Seeking Understanding (2) Seeking Sense of Self (3) Seeking Meaning and (4) Seeking Safety. A new self-regulation model of illness behaviour 'The Woman's Heart Model' emanated from the study findings and contributes significantly to our understanding of the behaviour of women with myocardial infarction.

The gendering of coronary artery disease to a male phenomenon has resulted in sub-optimum treatment for Irish women experiencing myocardial infarction. Women are mainly unaware of their personal risk for MI, and have difficulty attributing their 'atypical' symptoms to a cardiac cause. They delay seeking treatment for this condition thus limiting their opportunities to avail of optimum therapeutic benefits. There is an urgent need to correct the erroneous image of this disease and to increase women's awareness of their personal risk.

Acknowledgements

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Glossary

Androcentric means to be centred or focused on men, often to the neglect or exclusion of women:

Angina is a term used to describe choking pain (Latin, throat pain or choking). When coupled with the word 'pectoris' (Latin, of the chest), angina refers to a painful, constricting sensation in the chest. Angina is caused by coronary artery disease, which reduces the supply of blood to the heart muscle.

Atypical MI symptoms include absent or vague chest discomfort, fatigue, malaise (a feeling of general discomfort or uneasiness), shortness of breath, unexplained nausea and vomiting, unexplained weakness, dizziness, light-headedness or syncope.

Census is a sample consisting of the entire population of interest

Care Pathway in the present study refers to the elapsed time from symptom onset to the receipt of reperfusion therapy and a CCU bed. It provides the sequence and timing of events/treatments between these points.

Co-morbidities in the present study refer to coexisting diagnoses that are unrelated to the principal cardiac diagnosis. These co-morbid conditions (e.g. arthritis) have an impact on the patients ability to interpret symptoms as well as their overall quality of life.

Coronary Angiography is a procedure used to make an x-ray picture (angiogram) of the heart's blood vessels after injecting a contrasting dye into the blood stream.

Coronary Artery Disease or coronary heart artery disease is a narrowing of the small blood vessels that supply blood and oxygen to the heart (coronary arteries). Coronary disease usually results from the build up of fatty material and plaque atherosclerosis. As the coronary arteries narrow, the flow of blood to the heart can slow or stop. The disease can cause chest pain (stable angina), shortness of breath, myocardial infarction or other symptoms.

Diaphoresis means perspiration, or an increase in perspiration.

ECG ambiguous describes an ECG that does not conform to the 'typical' electrographic configuration indicative of MI

Episodic memory is the memory of a personal experience or 'episode' that is tied to particular times and places. This type of memory is declarative and is relevant both to recent and remote events

Epistemology is a branch of philosophy that addresses the philosophical problems surrounding the theory of knowledge. Epistemology is concerned with the definition of

knowledge and related concepts, the sources and criteria of knowledge, the kinds of knowledge possible and the degree to which each is certain, and the exact relation between the one who knows and the object/subject known.

Feminist theorists aim to understand the nature of inequality and focus on gender politics, power relations and sexuality. The basis of feminist ideology is that society is organised into a patriarchal system in which men have advantage over women.

Feminism is a social theory and political movement primarily informed and motivated by the experience of women, including the struggle for individualism and economic citizenship. While generally providing a critique of social relations, many proponents of feminism also focus on analysing gender inequality and the promotion of women's rights, interests, and issues.

Gender is a social construct that varies from society to society over time. It can be viewed as the full range of behaviours, personality traits, attitudes, feelings, expectations and responsibilities ascribed by society to the sexes on a differential basis.

Gender Bias is the tendency to favour one gender over the other where such favouritism is based on stereotyping, prejudice, distortion and irrational preference.

Gender Blindness is the failure to recognise that gender is a major determinant of social outcomes, including health.

Gender Equality means that women and men, girls and boys enjoy the same status in society. To ensure equality, there must be an absence of discrimination on the basis of a person's sex in authority, opportunities, allocation of resources and access to services.

Gender Equity is the process of being fair to women and men, girls and boys. To ensure fairness, measures must be available to compensate for historical and social disadvantages that prevent women and men from operating on 'a level playing field.'

Gender Identity descibes a person's own feeling of belonging to a particular gender (i.e, whether one conceives oneself to be a woman, a man, or describes oneself to oneself in some less conventional way). Gender identity can be used to refer to the gender that other people attribute to the individual on the basis of what they know from gender role indications (clothing, hair style, etc.). Gender identity may be affected by a variety of social structures, including the person's ethnic position, employment status, religion and family

Gender Mainstreaming: Mainstreaming a gender perspective is the process of assessing the implications for women and men of any planned action, including legislation, policies or

programmes, in any area and at all levels. It is a strategy for making the concerns and experiences of women as well as of men an integral part of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres, so that women and men benefit equally, and inequality is not perpetuated. The ultimate goal of mainstreaming is to achieve gender equality.

Gender Roles are the particular economic and social responsibilities deemed appropriate for women and men in a given society. Gender roles and characteristics do not exist in isolation but are rather defined in relation to one another and in the relationships between women and men, girls and boys. People's gender roles are integrated into the ways by which they express their gender identities.

Gender Sensitivity is the ability to perceive existing gender differences, issues and equalities, and incorporate these into strategies and actions.

In-hospital Care Pathway in the present study refers to the period of time and associated events from A&E admission to receipt of reperfusion therapy and a CCU bed.

Ischaemia is a condition where there is a decrease in the blood and oxygen supply to a bodily organ, tissue, or part caused by constriction or obstruction of the blood vessels.

Ischaemic Heart Disease is a form of heart disease in which the primary manifestations result from myocardial ischaemia due to atherosclerotic coronary artery disease. This term encompasses a spectrum of patients ranging from the asymptomatic preclinical phase to acute myocardial infarction and sudden cardiac death.

Killip Class is a classification system used in individuals with an acute myocardial infarction in order to risk stratify them. Individuals with a low Killip class are less likely to die within the first 30 days after their myocardial infarction than individuals with a high Killip class.

Lay-consultant is usually a significant other i.e. family member or close friend of an individual, from whom health advice is sought, or behaviour validated.

Medical Card possession is effectively a statement that an individual has 'full eligibility' for health services i.e. the holder is entitled to a range of health services free of charge. In practice, most Medical Cards are granted on the basis of a means test and/or medical need. The Health Boards agree income guidelines each year. These guidelines are revised, at the start of each year, broadly in line with inflation. People over 70 years of age are entitled to a Medical Card regardless of income

Myocardial Infarction (MI) is a medical term used to describe a serious heart condition commonly known as heart attack, where "myo" refers to muscle, and "cardium" refers to the

heart (myocardium is the heart muscle). The word 'infarction' means tissue death (necrosis) caused by a clot or obstruction of blood flow (ischaemia). A heart attack is an acute process of myocardial ischaemia with sufficient severity and duration to result in permanent myocardial damage. As such, myocardial infarction is a life-threatening medical emergency that demands immediate activation of the emergency medical services.

- **Confirmed By:**

  (1)Typical rise and fall of the biochemical markers of myocardial necrosis (eg troponin or CK-MB) with at least one of the following.

  (a) Symptoms suggestive of ischaemia

  (b) Development of pathologic Q waves on ECG

  (c) ECG changes indicative of ischaemic

  (d) Coronary artery intervention (e.g. PTCA)

Non ST Elevation Myocardial Infarction (NSTEMI) constitutes a clinical syndrome that is usually caused by atherosclerotic coronary artery disease and associated with an increased risk of cardiac death and myocardial infarction. NSTEMI and unstable angina are considered to be closely related conditions whose pathogenesis and clinical presentations are similar but of differing severity; that is, they differ primarily in whether the ischemia is severe enough to cause sufficient myocardial damage to release detectable quantities of a marker of myocardial injury, most commonly troponin I (TnI), troponin T (TnT), or CK-MB. The diagnosis of NSTEMI is established if a marker has been released; however, the typical ST elevation associated with MI is not present. Thrombolytic treatment has not been shown to be of benefit in patients with acute coronary syndromes without ECG ST segment elevation.

Patriarchy describes a system of male authority that is believed to oppress women through its social, political and economic institutions.

Percutaneous Transluminal Coronary Angioplasty (PTCA) involves the insertion of a thin catheter attached to a tiny balloon into the artery that is blocked. When the catheter reaches the site of blockage, the balloon is inflated, flattening the plaque against the arterial wall and enlarging or re-opening the vessel.

Positivism is the view that serious scientific inquiry should not search for ultimate causes deriving from some outside source but must confine itself to the study of relations existing between facts which are directly accessible to observation.

Pre-hospital Care Pathway in the present study represents the period of time and its associated events from initial symptom onset to A&E admission.

Primary Percutaneous Transluminal Coronary Angioplasty (PTCA): In people with a recent heart attack, an alternative to thrombolytic therapy is immediate coronary angiography

followed by percutaneous angioplasty of the lesion responsible for the heart attack. This treatment is called 'primary PTCA'

Private Health Insurance provides indemnity insurance against the unforeseen and potentially financially serious consequences of ill health that require acute intervention or care.

Prodromal Symptoms are early warning symptoms that may mark the beginning of a disease or illness. For example, a sore throat can be a prodromal symptom of the common cold. Being aware of prodromal symptoms can help a person treat the disease or illness early so that it does not get worse.

Public Patient: For the purposes of this study, a public patient describes those patients who have neither a medical card nor private health insurance. As such, a public patient may have to pay for all medical expenses that she/he accrues.

Reperfusion describes the resumption of blood flow to an oxygen/blood-deprived organ or tissue.

Reperfusion therapy: The ultimate goal of the management in the acute phase of myocardial infarction is to salvage as much myocardium as possible and restore contractile function of heart chambers. This is achieved primarily with reperfusion therapy such as thrombolysis or primary PTCA.

Sex refers to the biological aspects of being male or female

Silent Ischaemia describes the presence of objective evidence of myocardial ischaemia in the absence of chest discomfort or other anginal equivalents.

Typical MI Symptoms include spontaneous pain behind the sternum (breast bone) or the front of the left side of the chest with possible radiation of the pain towards the left arm. The pain can also radiate towards the hands, jaw, ear, stomach or the right arm and may be accompanied by diaphoresis, shock and collapse.

Semantic Memory is strongly language-based and describes memory for facts and words. It can be thought of as a form of non-declarative memory because the knowledge is often not associated with a particular time or place.

Thrombolysis refers to the breaking up of a blood clot

Thrombolytic Agent is a drug that breaks up or dissolves blood clots, which are the main cause of a heart attack. By dissolving the clot, the blood is able to start flowing again to that area of the heart. If the blood flow to the heart is started again rapidly, it may prevent long-

term damage to the heart muscle and may even stop an event that could have been fatal. The sooner thrombolytic therapy is given, the better the outcome. The window of opportunity is a very short amount of time approx. 6 hours

Triage is a system of sorting patients according to their illness or injuries so that patients can be steered to the most appropriate health worker.

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List of Abbreviations

A&E: Accident and Emergency

ACE: Angiotensin Converting Enzyme

CCU: Coronary Care Unit

CSM: Common Sense Model

ENACT: European network for acute coronary treatment

GISSI: Groppo Italiano per lo Streptochinasi nell Infarto Miocardico

GP: General Practitioner

GUSTO: Global Utilization of Streptokinase and Tissue Plasminogen Activator for Occluded Coronary Arteries

HBSC: Health Behaviour of School Children

ISIS: International Studies of Infarct Survival

MATHS: Major Academic Teaching Hospitals

MI: Myocardial Infarction

MILIS: Multicenter Investigation of the Limitation of Infarct Size

MITI: Myocardial Infarction Triage and Intervention

NSTEMI: Non ST Elevation Myocardial Infarction

PTCA: Percutaneous Transluminal Coronary Angioplasty

REACT: Rapid Early Action for Coronary Treatment

SAVE: Survival and Ventricular Enlargement

SES: Socio-Economic Status

SLAN: Survey of Lifestyles and Nutrition

TPA: Tissue Plasminogen Activator

WHM: Woman's Heart Model

WHO: World Health Organisation

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Chapter 1
Main Introduction

The main cause of death amongst Irish women is currently cardiovascular disease. Approximately 4252 women died each year from ischaemic and other cardiovascular complaints during the years 1989-1998 (Balanda & Wilde 2001), affording us the second highest mortality rate from ischaemic heart disease amongst women living in the European Union (Eurostat 2002). Despite these statistics, Irish women are largely unaware of their personal risk for this disease and continue to be overly concerned about their risks for more 'female' conditions such as breast cancer (Ulstad 2001). However, in her life time Ulstad (2001) suggests that an Irish woman is ten times more likely to develop diseases related to the cardiovascular system than breast cancer and twice as likely to die from Myocardial Infarction (MI) or stroke than from all cancers combined (Lancet 2003).

However, as Cartwright (1983:4) noted, merely 'counting the dead is not enough' and although mortality statistics show us the outcome of disease, they provide little information about the impact of the disease on those still living. Decades of health research statistics show us that when viewed in isolation, they provide no information about the health experiences of individuals or groups and as such are a poor barometer of health. What population statistics do reflect is a broader ideological viewpoint, that tell us more about the counters than the counted (Krieger & Zierler 1996). The viewpoint reflected in mortality statistics is that of medicine, a socially constructed institution with its own ideology and normative frame. Emerging from the positivist tradition, biomedical researchers hold steadfast to the view of an objective, value-free, tangible reality of disease, using numbers to separate fact from meaning, observer from the observed and expert professional from layperson.

In its quest for the true homogenous group, the controlled environment and the predictable singular reality, biomedicine has restricted its mode of inquiry to a narrow range of privileged methods (e.g. population survey, experimental or randomised control trial) and to a particular type of subject matter (e.g. white, middle-aged male). Thus, biomedicine has had an historical preoccupation with measuring the diseases of men, with little interest shown to the non-reproductive health of women. Furthermore, in diseases shared by women and men, white middle-aged men have been the subjects of choice, whilst the 'male' results of such studies have been generalised to female patients. Consequently, the neglect of women's non-reproductive health, coupled with their exclusion from biomedical research, means that there continues to be significant gaps in our knowledge of women's health. Moreover, many feminist and public health researchers criticise biomedicine's preoccupation with numbers, acknowledging that the complexities of health and illness and the questions emanating from them, are such that one method of inquiry such as the randomised trial, is insufficient to answer all of them in any in-depth way (Krieger et al 1993, Oakley 2000, Inhorn & Whittle

2001). It is clear that the traditional biomedical research parameters are both influenced by androcentric biases and restricted by myopic research vision. However, as the vast majority of nursing and medical practice continues to be based on such biased research, it presents some serious and potentially life-threatening consequences in terms of diagnosis, treatment and health education for women's major health conditions such as myocardial infarction (Greaves & Havinsky et al 1999).

A consequence of excluding women from biomedical cardiac research is the creation of an erroneous image that depicts the male as the typical victim of myocardial infarction (MI) and the female as atypical. In 'gendering' this disease to a male phenomenon, women may ignore cardiac health messages, delay seeking help for non-male cardiac symptoms and may receive cardiac treatment designed for males (Radley et al 1998). In creating this image, a bias towards males is likely to ensue, in respect of treatment priority and opportunity. The dangers of biased care become a real cause of concern when we consider that women are less likely to undergo extensive investigation or evaluation of cardiac symptoms (Ayanian & Epstein 1991, Wenger et al 1993) to be admitted to coronary care for thrombolysis (Clarke et al 1994) to undergo angioplasty or cardiac surgery (Khan et al 1990, Petticrew et al 1993), to be referred for or complete in-hospital cardiac rehabilitation programmes (Schuster & Waldron 1991, McGee & Horgan 1992) to receive counseling following myocardial infarction (Hamilton & Seidman 1993) or to be included in cardiac research (Khaw 1993, Wenger et al 1993). Men are twice as likely to receive cardiac treatment than women, even though women have symptoms as often as men, report an inability to work more often than men and have a higher mortality rate post myocardial infarction (Ayanian & Epstein 1991, Steingart et al 1991). In recent years, efforts have increased to consider health in the framework of human rights (WHO 1998) and when considered in this way, cardiac health becomes not merely a social good, but accompanied by rights and responsibilities. As such, the lack of attention to or health neglect of any oppressed group may be considered as systematically discriminatory when viewed within the context of citizenship and the legislative and regulatory frameworks of different countries. Thus, I consider the 'gendering' of coronary artery disease to be an infringement of women's rights to receive optimum cardiac health care and view the androcentric biases of biomedical research practices as discriminatory in nature.

In common with many Western countries, Ireland has a dearth of information about the impact of coronary artery disease on the lives of Irish women, with an absence of published research concerning this topic emanating from Irish nursing and medicine. However, a timely examination of myocardial infarction care-pathway time frames was recommended in the Irish Cardiovascular Health Strategy (Department of Health & Children 1999) and provided an opportunity partially to correct the knowledge deficit in this area of cardiac care. Therefore, the aim of the current study was to examine in-hospital delays/opportunities to treatment for patients with myocardial infarction, attending Dublin hospitals and to establish whether a

gender effect existed. In so doing, this study assisted in gathering baseline information requested by the Irish Cardiovascular Health Strategy Group, whilst also retrieving invaluable insights into the cardiac experiences of Irish women. Included in the study, is the Dublin Major Academic Teaching Hospitals (MATHS) 2001/2 MI Census, which is the longest MI census (12-months duration) ever carried out in Ireland and the largest one (N=890) completed in Dublin. It is also the first time that the Dublin MATHS have been viewed as a specific census group, enabling comparisons to be made within these six major hospitals. An additional in-depth examination of Irish women's pre-hospital behaviour was also performed, which provided valuable insights into this previously unexplored area of care and as such presents a unique nursing contribution to women's cardiac health. The 'Woman's Heart Self Regulatory Model' of behaviour emerged from these findings and provides a useful framework for understanding women's pre-hospital cardiac-health experiences.

The study should be read with due consideration of my clinical nursing background and the social environment within which my study participants and I reside, as both contributed important contextual and explanatory insights to the study findings. The main impetus for this study emanated from my clinical nursing experience, caring for women and men with cardiac emergencies. Spanning a total of 10 years (1988-1998), I nursed patients in both cardiac surgical intensive care and coronary care units. During my time in coronary care, I became aware of subtle differences in the acute treatment of women and men with cardiac complaints, in particular, MI. More women than men seemed to have 'too-late' cited as a reason for non-administration of thrombolytics, whilst many women with a 'late' MI, were frequently admitted to the medical ward rather than the coronary care unit. I also became aware, that women with cardiac complaints were likely to be discharged home without an angiogram, whereas male patients appeared to have the test prior to discharge. On occasion, these treatment differences were discussed amongst the nursing staff and the medical decision challenged. However, these challenges were rare occurrences and I believe were more likely to happen if the woman was younger than the usual female MI admission.

I also reflected on my own nursing practice during this time. In caring for patients with MI, I concluded that the condition seemed to take an enormous toll on female patients, in comparison to their male counterparts, which at the time I put down to their older age group. I now realise that I encouraged younger men to achieve their optimum cardiac health status as early as possible following MI, yet I was much 'gentler' with my approach to older women and expected and allowed for a slower rate of recovery. I did not challenge decisions to discharge older women without angiogram, as I rationalised that any additional ordeal would be too much for them. I do not remember having these thoughts for older men, who were routinely provided with an angiogram prior to discharge. Thus, although I recognised that medical treatments were subtly different between women and men, my own nursing practice often served to sustain these differences.

Further insights into my own practice became evident when I began teaching in 1998 and taught extensively on post-graduate critical care and Accident and Emergency (A&E) nursing courses. During a teaching session, outlining exam techniques for questions related to MI, I advised a group of A&E nurses firstly to 'picture' a patient they had once cared for with MI, before attempting to answer potential exam questions. A male student stopped me and asked 'why do we always think of a male patient, when we think of MI?' On questioning the class, we ascertained that everyone in the room had an image of a male patient in her/his head. We discussed this and concluded that although women and men both experience MI, *society* perceives it as a 'male' disease. However, on reviewing the questions set for the pending examination, I realised that I had included scenarios of male MI patients only and none of women. Furthermore, my teaching notes predominantly focussed on the 'male' as norm and classic 'symptomology' as initial assessment markers. I became acutely aware that I had unwittingly prescribed to biomedical values and had made invisible the experience of MI in Irish women. I tried to understand why the gendering of MI had occurred in nurse education, nursing practice and society.

Although I Initially blamed the androcentric biases of biomedicine and their infiltration into nursing practice and education, I also realised that the problem was more complex than the sheer dominance of biomedical knowledge and research traditions. The pre-occupation with all-male research, the rendering of white males as norm and generalising of male findings to women, merely reflected the values in Irish patriarchal society. Therefore, the exclusionary practices of biomedical research that are presented in this thesis should not be viewed in isolation, but rather as a symptom of an unjust and unequal society that values males over females. Equally, the findings of the study should be considered in light of my social position as nurse and researcher. Although I have never experienced a myocardial infarction, nor have had a loved one experience this condition, I believe that my in-depth knowledge of this disease and my experience of caring for patients with MI, contributed to the generation of valuable nursing insights. I also felt that being female allowed me to identify to some extent with the social context of other women's lives. However, I was also acutely aware that different social positions within genders frequently result in different levels of social oppression and apart from being female and Irish I recognised that I may have had very little in common with my female participants.

This thesis is structured into eight chapters, the next of which examines the background literature regarding women and heart disease. By examining the concepts of health, sex and gender, I explain how the androcentric biases of biomedical cardiac research, have 'gendered' coronary artery disease as a male phenomenon. The historical exclusion of women from cardiac research is discussed, as is the impact of such androcentric practices on the cardiac health of women. These are critiqued from a feminist, public health and human

rights perspective. Patriarchy is introduced as a way of explaining gender inequalities in society and how these values infiltrate dominant social structures such as medicine.

Chapter 3 introduces the study's research questions as well as the research design. Feminist research principles provided the framework for the entire study and as such challenged the androcentric values of biomedical research by positioning women at the centre of the research inquiry. The use of a sequential across-method triangulation approach to data collection provided the vehicle whereby the notion of a singular reality would be dispelled. An initial quantitative strand (strand 1) led the inquiry into MI care-pathway delays, the results of which provided the impetus for the qualitative strand (strand 2).

Chapter 4 discusses the method section for strand 1 of the study, including the development of the Dublin MATHS 2001/2 MI Census, whilst chapter 5 presents the results and findings emanating from this strand. These quantitative findings and supplementary field notes directed the qualitative strand of the study, the methods section of which is discussed in chapter 6. By employing the in-depth interview, I examined the pre-hospital experiences of 12 women, following their myocardial infarction. A Self-Regulation Model of Behaviour 'The Woman's Heart Model' emerged from the analysis of the qualitative data and these are presented in Chapter 7. Chapter 8 is a final discussion chapter where I place the study findings within the broader socio-political arena. Recommendations emanating from these findings are put forward, as well as implications for nursing, medicine and the Irish health care system.

Chapter 2
Literature Review

2.1. Introduction

In this chapter, I critically examine how coronary artery disease, the major killer of Irish women, has been rendered a male disease. The gendering of this condition to a male phenomenon is considered detrimental to the cardiac health of women, resulting in sub-optimum or inferior care for this group. The critique opens with an examination of sex and gender as determinants of health and a discussion concerning the problems associated with reductionist research modalities. Biomedical research and knowledge claims are considered to manipulate professional and lay perceptions of health and illness and these dominant influences are critiqued from feminist, public health and human rights perspectives. Finally, the gendering of coronary artery disease, in particular MI, is critically examined in relation to its implications for women's cardiac health. Illness presentation, diagnosis, help-seeking delays and treatment regimes are examined from the perspective of women with MI, demonstrating how the gendering of this condition potentially limits their survival opportunities. The literature review concludes with an outline of the aim and impetus for the present study. The literature search strategy included the use of CINAHL (Cumulative Index to Nursing and Allied Health) Cochrane, MEDLINE, Nursing Journals / ProQuest, PsychARTICLES, the Psychology & Behavioral Sciences Collection, PsycINFO, Pubmed, ScienceDirect, Social Sciences Citation Index and Synergy databases. Also sourced were major texts, government publications, find.articles.com and Google search engine.

2.2. Gender Matters in Health

According to the World Health Organisation (1948) the ability to receive the highest available standard of care is a fundamental right of every human being, irrespective of race, religion, political beliefs and economic or social conditions. The ensuing World Health Organisation (WHO) definition of health as 'the dynamic state of complete physical, mental, spiritual and social well-being and not merely the absence of disease or infirmity' (WHO 1948:100) embodies these sentiments; however, I consider this statement 'gender-blind' and as such inadequate in defining the complexities of women's health. My emphasis here on women's health in relation to gender, is not meant to dismiss or minimize the impact of gender on the health of men, but rather to address the historic distortions associated with women and health. These distortions include the predominant use of the 'male' as the normative frame in biomedical health research, education and practice, thus relegating the feminine to the margins of 'abnormal' or 'other'.

Our understanding of women's health has evolved significantly over the past 50 years and has been advanced by the growth of feminist and women's health movements internationally (Doyal 1984, Broom 1991, Ruzek et al 1997). Traditionally, a woman's health was assumed

to be dominated by the physiological and pathological functions associated with her reproductive system and these functions were considered the key to understanding her physical, mental and moral peculiarities (Moscucci 1990). Until recently, women's health continued to be defined primarily in terms of childbearing, menstruation and menopause; however, in the past two decades we have witnessed a major shift in our understanding of women's health. This re-shifting of focus culminated in 1995 at the Fourth World Conference on Women, in Beijing, where the following definition of women's health was offered;

> 'Women's health involves their emotional, social and physical well-being and is determined by the social, political and economic context of their lives, as well as by biology.'
>
> (Report of the Fourth World Conference on Women, Beijing 1995:37)

In articulating the 'social, political and economic context' of women's lives, the Beijing conference shifted the focus and definition of women's health away from a strict biological model of health determinants, to one that incorporated an analysis of gender. As such, it encompasses a broader view of women's gendered lives and the health that they may expect to enjoy within gendered societies, than that offered by the WHO in 1948. I considered that the use of the 'Beijing' definition would best serve an examination of women's cardiac health and therefore adopted it throughout the course of the study. As such, I considered the determinants of women's cardiac health to originate from a myriad of overlapping biological and broader social factors, rather than a purely biological causative origin.

These broader determinants of cardiac health include income, politics, social status, social support networks, education, housing, employment, social and physical environments, race, culture and age - which from now I will refer to as socio-economic determinants. Whilst many biological and socio-economic determinants of health are the same for women and men, Kaufert (1996) suggests that because of the interaction of these determinants of health with gender, the health and illness experiences of women and men may be very different. However, in researching health (cardiac and otherwise), social and biomedical researchers have worked in isolation from each other, with each claiming that health determinants are either biologically or socially driven, but rarely a combination of the two (Bird & Rieker 1999). One barrier to crossing these interdisciplinary research boundaries is a crucial gap in terminology – the continued confusion about 'sex 'and 'gender'. Such dichotomous thinking has restricted the advancement of social and biomedical inquiry, as each assumes that a 'line' exists where 'sex' stops and 'gender' begins. I consider this 'line' a malleable 'structure' that cannot easily separate or distinguish the person from her/his environment. However, at the expense of perpetuating this dichotomy, it is important to examine what is meant by the distinct biological and social determinants of health when integrated with gender, as this

understanding provides an insight into opposing research paradigms. The importance of integrating these two perspectives will be addressed later when I discuss women's cardiac health (see chapter 8).

Sex is biologically determined, whilst sex differences refer to biological characteristics such as anatomy (e.g. body size and conformation) and physiology (e.g. hormonal activity), which may be different between the two sexes (Falk 1996). These characteristics are very different in men and women and therefore demand consideration within the health care system. The most obvious biological difference between women and men is their unique reproductive systems, which generate health care challenges specific to each sex. Women may potentially require health care related to uterine, cervix and breast, where treatment for prostate cancer is specific to men. As previously mentioned, the health care sector has traditionally focussed on reproductive differences between women and men; however, both the physiological and anatomical distinctions between females and males shape a much broader range of health issues.

Women tend to be shorter than men, weigh less and have smaller hearts and coronary arteries (Legato & Coleman 1991). These fundamental differences between women and men alone, suggest that certain patterns of illness may present differently in the sexes and at the very least demand that treatment is tailored according to sex specific needs. Sex differences in the causes, prevalence and outcome of many diseases such as HIV/AIDS, tropical diseases, coronary artery disease and tuberculosis are beginning to emerge (Hudelson 1996, Doyal 1998, Garenne & Lafon 1998), highlighting intricate differences in patterns of risk, presentation and outcome. In addition, the sex difference in potential longevity, insists that biological differences are not merely confined to those associated with reproduction, but also include genetic, hormonal, metabolic and other physiological variations. The life expectancy of Irish women has exceeded that of Irish males since 1950 (Department of Health & Children 2000) - the life expectancy of women born in 1995 was 78.6 compared to 73 for men. Biological explanations for women's greater life span emphasise the health advantages that accrue from the physiological potential for childbirth. These advantages appear to include a heightened immune system, especially during pregnancy (Hedge 1991) and a lower risk of heart disease prior to menopause. However, the biological risk associated with being female, includes a greater risk of autoimmune disorders and a higher risk of genetic immune suppression disorders (Report of the National Institutes of Health 1992). As such, women's health advantage of greater immunity turns in on itself, as the immune system attacks their own bodies. Therefore, although women have a biological advantage of longer life, they also have a concurrent biological disadvantage of greater morbidity.

Gender describes how cultures assign to men and women specific characteristics, which distinguish one sex from the other (Doyal 1998). Lorber (1994) adds that gender is socially

constructed and as such acts as a system of social stratification that structures every aspect of our lives. To this end, this examination of gender uses the Irish culture to highlight the ways in which the gender construct is positioned within our society. Lorber (1994) suggests that gender is a way of signifying power relations, with men generally in possession of the greatest portion of power. These unequal power relationships are embedded in the family, the workplace, the healthcare system and the state, as well as in sexuality, language and culture. Women and men are frequently viewed as having different responsibilities, different rights, different rewards as well as different roles in society (French 1985). These differences remain strongly reflected in the huge split between the public world of business and politics, which is considered as innately 'male' and the private world of the home and family, which is considered as naturally 'female' (Doyal 1995). Harding & Sills (1999) suggests that the way in which women and men experience their worlds and the ways in which they impact on each other, greatly affect their subsequent health and healthcare experiences. The report on the Beijing Conference stated;

> 'A major barrier for women to the achievement of the highest attainable standard of health is inequality, both between men and women and amongst women in different geographical regions, social classes and indigenous and ethnic groups.'
>
> (Report of the Fourth World Conference Beijing 1995:37)

In addition, the United Nations Development Programme (1995) suggests that no society has been identified throughout the world where women are treated equally to or better than men. Those things associated with being male tend to be valued more highly than those associated with being female, resulting in different rewards attributed to the different sexes. In many societies, including Ireland, these are not merely differences in sex characteristics but reflect inequalities, which impact on the social and economic resources available to women. Implicit in the analysis of gender inequalities and the understanding of health inequalities, is the concept of patriarchy. Walby (1990) describes 'patriarchy' as an ideology that justifies and perpetuates male dominance, through the valuing of men, their health, activities and characteristics, whilst devaluing all that is female. She explains how patriarchy may be differentiated into two forms – public patriarchy and private patriarchy. Public patriarchy exists when women are segregated within the workplace and private patriarchy prevails when women are excluded from the economic arena through lack of opportunity, permission or encouragement to work outside the home. The concept of patriarchy is useful as it highlights certain important and frequently ignored realities in Ireland. Although not unique to Irish life, the shape it assumes in Ireland is influenced by our culture, history, religion, legal and economic structures. Within Irish households, male privilege and authority still tends to be supported by both the state and the church, with many married women financially dependent on men (Connell 1995). Although private patriarchy still prevails, women are increasingly

contributing to the labour force, thus intensifying their exposure to public patriarchy (Connell 1995).

The most obvious inequality faced by Irish women is evident in the distribution of income and wealth. This reflects women's subservient position in the labour market, their lower status within the household and their absence from the political sphere. Alongside the well documented relationship between low income and ill health, recent evidence suggests that health may also be affected by the distribution of wealth in society (Wilkinson & Kitzinger 1996). Harvey et al (2002) report that, in comparison to their counterparts in the world's 17 leading industrialised countries, Irish women are the worst off economically. Irish women's average weekly wages are €267 compared to €415 for Irish men. Furthermore, in 2002 only 13% of Ireland's elected representatives were women compared to 87% of men, (http://www.qub.ac.uk/cawp), thus demonstrating that women's access to power is not commensurate with either their numbers or their rights as Irish citizens.

Although economic wealth in recent years has probably changed women's access to both employment and political life, gender inequalities are still apparent in these areas (Fahey & Russell 2001). Women's health needs will vary according to their economic and social status (Wilkinson & Kitzinger 1996) with evidence suggesting that poverty remains a major cause of ill health in Irish women and men. In 1994, although approximately 34% of the Irish population were living on a disposable income that was less than 60% of the national average (Department of Social & Family Affairs 2002), Nolan & Watson (1999) suggest that female-headed households in Ireland experienced a 24% risk of poverty in comparison to a 17% risk in their male counterparts. Older women and lone female parents are a particularly vulnerable group and show the steepest increase in poverty risk between 1987 and 1994. Approximately 70% of one-parent households, the majority of whom are female, fall below the 60% poverty line.

Jacobson (1993) adds that in Irish society, the Human Development Index score for women is only 72.8% of that of men. In other words, Irish women have less opportunity to live a healthy life and maintain a decent standard of living than Irish men. It has also been suggested that the experience of poverty may be substantially different for women than for men. Rottman (1994) suggests that households on low incomes and relying on social welfare, display different methods of sharing financial management. The burden of poverty would appear to fall to women, who are usually left to manage household expenses. The Women's Health Council (2003) suggests that women's experience of poverty goes beyond material deprivation, but may be exacerbated by economic dependence, isolation from the public and social sphere as a result of dependent care, reduced educational/training/career opportunities, domestic violence and a lack of accessible or affordable dependent care. As Irish women experience more poverty and disadvantage than their male counterparts, it may

also be assumed that Irish women also experience greater health inequalities than Irish men do.

When considering the socio-economic and biological determinants of health, it is evident that both interact with each other to shape our health and illness experiences. Although social and biomedical researchers tend to examine the opposing determinants of health in isolation, the dominance of biomedical research in western society means that the biological determinants of health receive more attention than those of social origin. As such, our knowledge about socio-economic determinants of health and their interaction with gender is limited and our knowledge about women's health biologically driven. However, a critique of biomedical research into women's cardiac health reveals more than a mere preponderance with cells and genes. It highlights a systematic exclusion of women from cardiac research and a closed system of knowledge production that continually privileges the male. As such, biomedical research and practice reflects the patriarchal values entrenched in most western societies and in so doing, perpetuates gender and health inequalities. The following sections present a critique of biomedical cardiac research claims, from feminist, public health and human rights perspectives. Although I recognise that social reductionist research is also worthy of critique, I considered that a deconstruction of biomedical paradigmatic assumptions may best demonstrate the inadequacies and potential dangers of any reductionist claims to a singular truth.

2.3. The Gendering of Coronary Artery Disease

2.3.1. Gendering Knowledge

Many feminist writers see the development of knowledge as a political enterprise that develops within the milieu of competing social, political and economic frameworks (Williams & Popay 1997, Oakley 2000). These frameworks support the dominant practices and norms entrenched within the fabric of society and as such can perpetuate gender and health inequality. A fundamental basis of the dominance of medical knowledge relates to Cartesian dualism, in which all reality is characterized by two opposing principles; those of maleness and femaleness together with their fixed associations with science and nature, reason and emotion, objectivity and subjectivity and finally positivist and interpretist. According to this masculinist ontology, all reality is based on these presupposed binary and gendered terms and exists within a superior/inferior relationship (Stanley and Wise 1993). Oakley (2000) adds that the positivist/interpretist dichotomy represents a gendering of methodology, in which the positivist is viewed as masculine and hence the most powerful. She adds that knowledge gendering, as superior-masculine-positivist versus inferior-feminine-interpretist cannot be separated from the ways traditional science and social science developed or the gendered social structures within which they were embedded. Medicine as an institution of social control therefore reflects patriarchal values and male privilege in the dominance and validation of its

positivist knowledge claims. Oakley (2000) takes it one step further and suggests that some ways of knowing have continually sat at the perimeter of the dominant vision, in the same way as the lives and experiences of certain groups in society, such as women, are socially marginalized

De Konig & Martin (1996) suggest that the production of biomedical knowledge operates within a closed system, where an elitist group of statisticians, epidemiologists and medical professionals hold privileged positions of power, as only they decide which information sources may be considered legitimate forms of knowledge. This elite group, the majority of whom are male, select the research questions to be asked, collect data pertaining to health problems, decide how diseases should be named or classified, plan and prioritise public health policies and determine how resources should be allocated. As Doyal (1995) states;

> 'Both the priorities and the techniques of biomedical research reflect the white male domination of the profession. Bias has been identified in the choice and the definition of problems to be studied, the methods employed to carry out the research and the interpretation and application of results.'
>
> (Doyal 1995:17)

Within their narrow disease orientated 'lens', this elite group focus their activities on 'unraveling the specific mechanisms of disease processes, by tracing the biochemical pathways and pathological mechanisms of the body' (Fee & Krieger 1994:7). As such, little or no recognition is afforded to non-elitist groups, such as nurses, social scientists or feminists, to inform the production of knowledge, by their contribution of other possible knowledge sources. Opening this closed knowledge-production system would mean validating people's subjective experiences of health and illness as legitimate sources of knowledge whilst their meanings, narratives and expertise would be recognized as rich and invaluable sources of health data (Martin & Humphries 1996). However, as biomedicine has carefully cultivated its power and prestige, through the continued exclusion of non-elitist groups, the validation of 'other' sources of data as legitimate forms of knowledge, is frequently denied.

Despite the obvious flaws in biomedical research claims, cardiac health information derived from such a positivist tradition is still considered a valid source of knowledge, superior to all others. However, the social determinants of cardiac health and disease such as gender, poverty and oppression are given all but a fleeting glance (Krieger & Zieler 1995) and in so doing, biomedical research has failed to explore adequately or understand the impact of coronary artery disease on the lives of women. This failure is due to biomedical reductionist and elitist assumptions that suggest that cardiac illness experiences are biologically and socially neutral yet are biased towards men (Miller & Kollauf 2002). Therefore, biomedical

research not only denies the impact of social determinants on cardiac health, but by 'neutralising' the biological impact to the male anatomy and experiences of illness, it also silences or ignores the biological impact of sex (this is correct). Unfortunately, unexamined assumptions about biological and social sources of difference in cardiac illness experiences, have not only hindered the advancement of scientific knowledge in this area, but have been detrimental to the cardiac health of women (Lockyer & Bury 2002).

The biased assumptions of the biomedical paradigm have therefore led to a distorted image of this condition and a cardiac health service that has been designed to cater for the needs of men. This 'gendering' of coronary artery disease, as described by Lockyer & Bury (2002) has infiltrated health care settings and the broader society, to the extent that the major cause of death amongst women is considered a male disease. I consider that this 'gendering' of coronary heart disease has been permitted in society and healthcare because of the dominance of biomedical knowledge over other ways of knowing. Consequently, this prevailing system of knowledge production means that lay and professional information about heart disease is both limited and distorted. The following section outlines some of the sources of biomedical knowledge pertaining to heart disease, illustrating the biased and exclusionary nature of its research practices.

2.3.2. Add Women and Stir-The Biomedical Approach to Cardiac Research

Historically, medicine has used the white middle-aged man as the normative frame for all diseases shared by women and men (American Medical Association 1991). This medical practice predates to the Renaissance when Aristotle postulated that there was one sex, but two forms. According to Aristotle, foetuses developed their full potential, 'maleness', if they amassed an abundance of 'heat' and 'vital spirit' in early foetal development. Females were the result of inefficient growth and insufficient heat being absorbed by the foetus. Man was considered the measure of all things and superior to the weaker sex, woman. This belief became the medical basis of Aristotle's contention that women were 'failed males', a belief that transcended generations and is still echoed in the prevailing use of the male normative frame (American Medical Association 1991). Hence, medicine depicts the normal adult as a man, the female pelvis and genitalia mere additions to this norm. Subsequently, when women and men share a common illness, such as MI, biomedical research has traditionally focused on the male anatomy and male experience of illness as 'typical' with all others (female) considered 'atypical'. I consider the use of the word ' typical' and 'atypical' in this sense to be offensive to the female population of patients with MI, as once again, biomedicine reflects patriarchal values, where the male experience is valued and considered 'normal', the female experience devalued and considered abnormal or deviant. However, as these terms are commonly used, I shall refer to them for critiquing purposes only.

The traditional 'add women and stir' approach to biomedical research has rendered invisible the impact of heart disease in this group for many years. Few research studies included women, despite the fact that heart disease is the leading single cause of death in European women (Eurostat 2002) and the major cause of death in American women older than 50 years (American Heart Association 1998). Concern has been expressed that women are still not adequately represented in clinical trials that evaluate treatment that women are prescribed (Gurwitz et al 1992). Up until a decade ago, white middle-aged men were the model subjects in most funded bio-medical trials, with the assumption that whatever the findings, the results would also hold true for women.

A review of early longitudinal studies beginning in the 1950s shows that heart disease was considered a disease most likely to afflict men rather than women. Many studies, such as the Western Collaborative Group study conducted by Rosenman et al (1975), omitted women entirely. This famous prospective study followed up 275 men beginning in 1960 or 1961 for 8 or 9 years. Researchers examined risk factors for coronary artery disease and reported a significant link between Type A personality type and coronary artery disease. However, this reported link was only established in male subjects, yet the findings were generalised to female and male cardiac patients.

A later study, the Los Angeles Heart Study carried out by Chapman & Massey (1964) included both men (1859) and women (393) in the study population. The researchers examined the relationship between serum cholesterol, hypertension, body weight and the risk of coronary artery disease. These were extremely important findings in establishing risk factors for coronary artery disease; however, women were not included in the final data of the first 10 year follow up, which was published in 1964. The prevalence of coronary artery disease in white men was the only reported data. It is unclear why data on women was omitted from the findings, but it is possible that researchers in 1964 did not consider gender as an important variable.

A large epidemiological study, Pooling Project 5 (1978), drew from five studies to evaluate risk factors for coronary artery disease. This was another extremely important piece of research, which greatly advanced knowledge in relation to the evaluation of risk factors for coronary artery disease alone and in combination with one another. The study used fatal and non-fatal myocardial infarction and sudden death as end-points. However, although two of the five studies included women participants (Johnson et al 1965, Dawber et al 1951), researchers utilised only data from white men in their final analysis. Such studies, although significant in expanding general knowledge of coronary artery disease, failed to acknowledge the impact of the disease in women.

In the late 1970s and early 1980s the National Institutes of Health, which is the major source of American research funding, approved several important trials that excluded women. One such trial was the Physicians' Health Study (Hennekens & Aberlein 1985), which commenced in 1981, included 22,000 men and no women, yet examined the efficacy of aspirin in reducing the incidence of heart disease. As a result, no conclusions could be drawn on the effects of aspirin on women. However, aspirin is considered one of the first line treatments of myocardial infarction for both women and men (ISIS-2 1988) and is routinely given to both sexes in the treatment of coronary artery disease (Baigent et al 1998). As with other male only drug trials, the findings of the Physicians' Health Study were generalised to women. Following at least two decades of administering Aspirin to women, the evidence of safety and efficacy of aspirin for this group is only now beginning to emerge.

Hennekens et al (1996) reviewed the role of other pharmacological therapies on the outcome of myocardial infarction. Thrombolysis has comparable efficacy for both women and men (GUSTO 1993), despite higher rates of haemorrhagic stroke in women. Dosage of many thrombolytic agents are not weight related and even though women tend to weigh less than men, both sexes are administered the same drug amount. It is unclear whether the relative increased dosage of thrombolytic agents in women is the contributory factor to the increased risk of stroke in this group. In relation to beta-blockers, treatment with these drugs is associated with a 21% decrease in mortality, a 30% reduction in sudden death syndrome and a 25% decrease in re-infarction rate (Yusuf et al 1985, Ryan et al 1996), with reported similar outcomes for men and women in some studies (Kennedy et al 1982). The Survival and Ventricular Enlargement (SAVE) study (1992) demonstrated that treatment of post myocardial infarction patients with an ACE inhibitor increased long-term survival in those with reduced ejection fractions. Treatment with ACE inhibitors also resulted in a reduction in re-infarction rates, suggesting potential anti-atherogenic qualities of this treatment (SAVE 1992). Use of thrombolytics, beta-blockers and ACE inhibitors is now considered standard treatment for patients with MI (American Heart Association 1998); however, few data are available that examine gender differences pertaining to potential adverse reactions of these medications. Relative to men, women take more medications (Sherman 1993), experience greater co-morbidity (Kannel & Abbott 1987) and weigh less (Wenger et al 1993). These factors alone increase the likelihood that women will respond differently to drug therapies.

Attempts to justify the exclusion of women from cardiac research have mainly concentrated on the grounds that the menstrual cycle introduces a confounding variable in analysis of data that can be overcome only by using larger sample sizes or more complex techniques in data gathering and analysis. A further protective reason has been that experimental use of treatment might expose foetuses to unknown risk and excluding women who might be pregnant involves intrusive questioning or testing (Rosser 1994). In the United States, from where many of the cardiac drug trials have emanated, the Food and Drug Administration

policy through the early 1990s, prohibited women in childbearing years to participate in phase-1 drug trials (Merkatz et al 1993). These trials are associated with the testing of efficacy, safety policies and dosages of new drugs. When women were included in the more advanced phase 2 and 3 trials, adequate analysis of the data in relation to sex differences of safety and efficacy occurred in only 50% of trials during the years 1988-1991 (Merkatz et al 1993). By excluding women from clinical trials and failing to provide adequate sex related analysis of findings, important information concerning safety and efficacy is denied. However, considering that coronary artery disease occurs predominantly in the postmenopausal woman, there is little justification for the exclusion of women from these studies. The growing concern surrounding this issue has spurred attempts to include women in medical research. Although their participation in clinical trials has now increased, evidence of systematic gender bias in medical research still prevails.

A quantitative study carried out by Rochon et al (1998) investigated the reporting of data on women in published trials of drug therapy for myocardial infarction. All randomized controlled trials and meta-analysis of drug therapies for myocardial infarction published in the Lancet, New England Journal of Medicine, Journal of the American Medical Association, Annals of Internal Medicine and the British Journal of Medicine from January 1992 to December 1996 were evaluated. A total of forty three articles were evaluated in relation to (1) the reporting of the numbers of men and women in the trial (2) the use of subgroup analysis by sex (3) the use of interaction analyses to determine whether or not there were differences in the responses between the two sexes and (4) the discussion of gender related issues. Although the small number of journals somewhat limits the generalisation of the study results, the findings provide important insights into the under-representation of women in clinical trials. Results showed that of the 43 articles, 37 included female participants. Only 14 of these 37 articles provided gender related results; in two of these, subgroup analyses by sex were carried out. It is possible however, that for the remaining 12 articles, subgroup analyses may have been published at a later date. It is also possible that the authors of these papers were writing for the dominant male medical readership and as such presented data that were commonly accepted as legitimate knowledge sources. Seven articles included an interaction analysis to determine whether responses between the two sexes were different, whilst only 5 of the 43 articles mentioned gender-related issues in the discussion section. These results suggest that women continue to be under-represented in the clinical trials examined in the above journals.

This long list of studies outlining the exclusion of women from cardiac research demonstrates a systematic bias by biomedicine against women. The use of the male normative frame, together with scientific neutral assertions about sex and gender, has rendered invisible the impact of the condition in women. The absence of reliable information on women's health in reputed journals is also of concern, especially when the short-term prognosis of myocardial

infarction is far worse for women than for men. Surely, the participants of randomised trials for cardiac drugs should reflect the population who will be utilising the treatment. It is therefore essential that statistically significant numbers of women are included in trials of drugs for myocardial infarction and any other treatment that is marketed to women. However, the bias does not end with exclusion. Gender bias is evident at every stage of these biomedical studies and reflected in (1) the generalising of male based research to women (Mc Bride & Mc Bride 1994) (2) the assumption that gender-related differences are due to biological differences (Matlin 1996) (3) the discussion of gender differences without considering the differences between statistical and practical significance of the findings (Matlin 1996) and (4) ignoring gender as an important variable that can be used to highlight similarities and differences (Wallis 1994).

Even when women are included as participants, we have seen that the gender related information is either inadequate or is not published at all. As well as their exclusion from biomedical research, women's cardiac health experiences are catapulted to even further dimensions of invisibility by the contemporary disease orientated model of epidemiology, which frames health problems in terms of decontextualised exposures to risk factors, including the chosen life-styles of individuals (Wing 1994) (this is correct). Although epidemiology has historically concentrated models on the broader social aspects of health and illness, many lament the passing of this true 'public health' epidemiology, as a dominant hegemonic disease model takes hold (Inhorn & Whittle 2001). In contrast to traditional 'public health' epidemiology, the prevailing epidemiological research model supports public health policies that (1) place blame on individuals for their ill-health because of their lifestyle choices (Pearce 1996) (2) limit our understanding of disease and ill-health by failing to identify meaning as a determinant of behaviour (Lawson & Floyd 1996) (3) ignore the social determinants of health and illness such as gender and class (Krieger & Zierler 1996) and (4) fail to acknowledge how local and global political economies and policies may affect health (Beck 1992). Hence, modern epidemiology, which is based upon the biomedical model, perpetuates the problem of exclusionary research by maintaining this closed and extremely limiting system of knowledge production.

The above critique also illustrates the biomedical & epidemiological preoccupation with numbers rather than words and a focus on the population survey or randomized trial as method of data retrieval. By and large, biomedicine employs a narrow range of data collection methods within the positivist tradition and in so doing, makes claims to a singular reality that is objective and value free. Feminist critiques of positivism mainly centre on these claims, suggesting that it is impossible to separate ourselves from our work, or to view research participants in isolation from the social contexts within which they reside (Oakley 2000). The above studies provide such biased evidence and suggest that biomedical cardiac research is discriminatory and reflective of socio-political values. Furthermore, the use of the male

normative frame not only omitted women from these studies, but also non-white, non-heterosexual, older and younger men. Moreover, when women have been included in biomedical cardiac research, they have mostly been white and middle class, e.g. the Framingham study (Dawber et al 1951). These practices have many ethical and moral implications, the least of which implies that biomedical research is elitist, value laden and politically driven.

Harding (1992) outlines two ways in which biomedical research and practice may be influenced by politics, the first of which relates to outside intrusion into the dominant domain. Few intruders are permitted entry into the biomedical domain; however, this type of politicisation influences 'what science gets done, how the results of research are interpreted and therefore scientific and popular images of nature and social relations' (Harding 1992:567). Examples of such political intrusion include the sponsoring of research projects by global capitalist corporations, such as pharmaceutical conglomerates (Browne & Fiske 2001). The other source of political influence Harding describes as insidious, with power 'exercised less visibly, less consciously and *not on but through* the dominant institutional structure, priorities, practices and languages of the sciences (Harding 1992:567). The exclusion of women from biomedical cardiac research is one such example, illustrating how the dominant social values (e.g. oppression of women) can be viewed as natural and normal, thus over-riding individual morality and professional ethics.

Employing a human rights framework suggests that women and other oppressed groups should enjoy the highest standard of cardiac health care available in their place of residence, as stated in Article 12 of the International Covenant on Economic, Social and Cultural Rights (United Nations 1966). In addition, the international bill of rights for women, the Convention on the Elimination of All Forms of Discrimination Against Women, refers specifically to women's rights to equal health care opportunities in Article 12 (United Nations 1967). Unfortunately, the biomedical knowledge base from which women's cardiac care has emerged appears to militate against women's rights to avail of equal cardiac care opportunities by gendering the disease to a male victim. As such, I consider the 'gendering' of coronary artery disease by biomedical research, to be a direct infringement of women's rights to be afforded and to receive the best cardiac care available. The following section presents evidence to support this claim and shows how biomedical reductionist assumptions that ignore the impact of gender and sex, at the expense of the feminine, are flawed. This evidence concentrates on the biological and socio-economic determinants of cardiac risk, as well as the biological differences in illness presentation, diagnosis and recovery. It further demonstrates that the risk and illness pattern of cardiac disease are directly related to the interaction of sex and gender and in so doing, renders the male normative frame redundant.

2.3.3. Gendering Risk

Although the risk factors for heart disease are similar for women and men, biological sex-differences mean that the magnitude of effect of some risk factors may be quite different. Furthermore, the gendered lives women and men lead also have an impact on these risk factors and on their ability to respond to health promotional messages. As previously mentioned, medicine claims to be a socially neutral science (Mishler 1981) and in assuming that diseases are neutral in relation to sex and gender, it attributes a 'neutral' or normative state to the male body. However, rather than just neutralising biology and society to the male anatomy and experience of illness, biomedicine predominantly ignores the impact of society altogether, focusing predominantly on the body as the only key capable of un-locking the complexities of disease. Hence, the female body is ignored or rendered invisible and the impact of gendered lives dismissed. Furthermore, in focusing on biological solutions, most biomedical research implies that the target for intervention is at the individual rather than the greater population level (Bird & Rieker 1999). As such, the individual is blamed for her/his lifestyle choices, which may exacerbate biological disadvantage or conversely enhance biological advantage. The following discussion outlines how biomedical 'neutral' assumptions are continuously proven incorrect and how sex and gender present as inseparable components of many of the major cardiac risk factors for women and men. Finally, the practice of generalising the results from male studies to female patients is shown to be ill founded and detrimental to women's cardiac health. Apart from the Framingham Study (Dawber et al 1951) and the Nurses' Health Study (Johnson & Fee 1997) the majority of cited studies pertaining to women and cardiac risk are concentrated in the last decade, when concerns about the exclusion of women from cardiac research began to demand and reap change.

- **Smoking**

The recent Survey of Lifestyles, Attitudes and Nutrition (SLAN) and Health Behaviour in School-aged Children (HBSC) (Friel et al 1999) provide up-to-date information on the prevalence of smoking in Irish adults and school children. Overall, 31% of the (N=6,539) surveyed adult population was regular smokers, with the prevalence almost equal for both women (31%) and men (32%). When adjusted for age, prevalence was highest (40%) amongst women in the 18-34 year age group. Social classes 3-6 were associated with a higher number of smokers (38% women and 36% men), in comparison to social classes 1 and 2 (28% women and 25% men). The HBSC findings (N=8,497) suggest that 21% of school children aged 9-17 years are current smokers. Boys appear to start smoking at a younger age than girls do; but by the age of 15-17 years, more girls smoke than boys do. The prevalence was highest (40%), in girls aged 15-17, in social classes 5 and 6. The high prevalence of smoking among women and young girls in the SLAN and HBSC studies is alarming.

Smoking therefore continues to be the leading preventable cause of death amongst Irish women and men (Department of Health and Children 1999); however, it would seem that women sacrifice even more when they smoke than men. A number of studies have explored the issue of sex differences in the effect of smoking on heart disease (Janghorbani et al 1993, Njolstad et al 1996), suggesting that female smokers have a greater relative risk of heart disease than male smokers do. One of these studies was the large prospective Norwegian study carried out by Njolstad et al (1996), which included 11,843 female and male participants. After adjusting for total and high-density lipoprotein concentrations, triglyceride concentrations, body mass index and systolic blood pressure, relative risk of myocardial infarction was 3.3 in female current smokers and 1.9 in male current smokers. Similarly, in the West of Scotland study (Janghorban et al 1993), which included 4696 female and 5714 male participants, the relative risk of death from heart disease was 1.9 in female smokers and 1.6 in male smokers after adjustment for major risk factors. A possible cause of the sex difference is an interaction of some hormonal factors with components of inhaled smoke, as growing epidemiological evidence suggests that women who smoke are likely to be deficient in oestrogen (Baron et al 1990). Thus, it is possible that tobacco smoke, together with the mechanisms by which it increases the risk of heart disease in both women and men, also appears to negate the protective factor provided by oestrogen in women. This results in women smokers having a greater relative risk of developing coronary artery disease than male smokers (Willet et al 1987, Baron et al 1990). Therefore, despite biomedical 'neutral' claims to health and disease, these studies show that even at the stage of risk factor prevalence and effect, sex differences are apparent.

However, gender also plays a role in determining the rate of smoking amongst women and men. Examining the reasons why women and men smoke, Bedinghus (2001) found that women were more likely to smoke to relieve stress, anger, boredom or depression. Furthermore, women were more likely to cite smoking as a strategy for weight loss and weight gain as a reason why they failed to 'kick' the habit. Qualitative research carried out by Graham (1987) suggests that for many women living in poverty, smoking is an essential mechanism for coping. In Graham's study on women's smoking behaviours, those caring for small children and living in extremely stressful low-income environments considered smoking to be a necessity rather than a luxury. Of the 57 women participating in this study, almost half noted that they would easily lose their tempers and that smoking was a major coping mechanism for handling their children's demands (Graham 1987). This evidence suggests that this major preventable risk factor for heart disease has social and biological determining factors and as such, the biomedical 'neutral' assumptions about cardiac health and illness must be rendered redundant.

- **Cholesterol**

As the vast majority of information regarding cholesterol and heart disease comes from male dominated research, judgements about cholesterol levels in women are made from comparisons with the normative frame, namely cholesterol levels in men. However, the lipid profile of women and men is quite different and so it is inappropriate to assign the same therapeutic parameters to women. In women, low density lipoprotein (LDL) cholesterol levels increase after the age of 55 years and peak between the ages of 55-65 years, almost 10 years later than in men (Bendinghus 2001). Elevated triglyceride levels and a low HDL level are reported to confer greater risk for coronary artery disease in women, compared with the elevated total cholesterol and LDL levels in men (Wenger 1996). An HDL level lower than 1.15mmols/L, appears to signify increased risk of coronary artery disease in women (Meilahn et al 1995, Wenger 1996). Low HDL cholesterol was second only to age as a predictor of mortality from coronary artery disease in women participating in the Lipid Research Clinics Follow up Study (Jacobs et al 1990). Conversely, an increased level of high-density lipoprotein (HDL) cholesterol is a particularly strong predictor of decreased risk of coronary artery disease in women. It is obvious that generalising results from male-dominated studies of cholesterol to women would be at best inappropriate and at worst detrimental to the cardiac health of women. It is therefore essential that clinicians view cholesterol level in women, not from a male parameter of normal, but from therapeutic parameters based on female experiences of health and illness.

- **Hypertension**

Further sex-differences are evident in the magnitude of effect in relation to hypertension. There is strong evidence linking hypertension with increased risk of coronary artery disease in both women and men (Kannel et al 1976, Johnson et al 1986, Fiebach et al 1989, Ulstad 2001). Of particular concern to women is isolated systolic hypertension, which occurs in later life and indicates loss of arterial elasticity. Saltzberg et al (1988) reports that isolated systolic hypertension is more prevalent in women than in men affecting approximately 30% of women over the age of 65 years. Several studies have linked this condition with increased mortality risk from coronary artery disease and stroke (Kannel et al 1981, SHEP cooperative research group 1991, Ulstad 2001).

- **Diabetes Mellitus**

Diabetes has been found to confer a greater risk of heart disease to women than men, as women with diabetes also appear to have greater obesity, hypertension and adverse lipid profiles than their male counterparts (Hines 2001). The mortality rate for coronary artery disease is three to seven times higher in diabetic women than non-diabetic women, in comparison to rates that are two to four times higher in diabetic men than non-diabetic men (Kannel & McGee 1979, Manson et al 1991). Ruderman & Haudenschild (1984) describe how diabetes exacerbates the effects of other known coronary risk factors. They also suggest that

diabetes impairs oestrogen binding, thus negating the protection against coronary artery disease that endogenous oestrogens provide for premenopausal women. Diabetic women therefore lose their pre-menopausal oestrogen advantage and are at equal risk of coronary artery disease as men in their forties (Wenger et al 1993). Bendinghaus (2001) adds that coronary heart disease is more likely to be fatal in diabetic women than diabetic men. Yet again, biomedical assumptions that proclaim that health and illness are biologically neutral must surely be dismissed in light of such glaring evidence.

The evidence pertaining to the above factors, which are commonly considered the major risk factors for coronary artery disease (Department of Health & Children 1999), shows clearly that their prevalence and magnitude of effect differ for women and men. As such, these major determinants of cardiac risk are greatly influenced both by biology and gender and any biomedical assumptions that dismiss or ignore these influences, must be deemed flawed. However, other factors, which predominantly emanate from the gendered lives of individuals, also contribute to an increased cardiac risk and these include oral contraception, sedentary life-style and disadvantage.

- **Oral Contraceptive Pill**

Women may be at greater risk from coronary artery disease than are men, due to their societal ascribed responsibility for contraception. The most remarkable of the current studies investigating the coronary risks associated with the contraceptive pill, was carried out by the WHO Collaborative study of Cardiovascular Disease and Steroid Hormone Contraception (1996). This case-control study was conducted in 21 centres in nine countries between the years of 1989-1993. Control and case participants underwent a standard interview to assess current and past use of oral contraceptives, cigarette smoking and history of hypertension. The results suggest an association between current use of oral contraceptives and myocardial infarction in more than 300 cases and age matched controls. Although the absolute risk for non-smoking women aged <35 years was low, this risk was dramatically increased in the older women who smoked, or who had hypertension. Therefore, although the risk of coronary events has decreased with current formulations and prescribing practices, women who are hypertensive and/or smoke continue to have increased risk. Hence, the social responsibility for contraception presents an increased gendered risk for myocardial infarction amongst women.

- **Sedentary Lifestyle**

Kelleher et al (2003) suggests that the most common risk factor for coronary artery disease amongst women is a sedentary life-style, adding that teenage girls and older women are more likely to have a sedentary life-style than any other groups. Since the 1950s, approximately 43

epidemiological studies have been carried out investigating the relationship of exercise to coronary artery disease. Only seven of these have examined and presented data on women separately – four prospective studies (Brunner et al 1974, Kannel & McGee 1979, Salonen et al 1982, Lapidus & Bengtsson 1986) and two case controlled studies (Magnus et al 1979, Scragg et al 1987). Results from these studies suggest that women who take regular exercise have a 60 to 75% lower risk of coronary artery disease than inactive women do. In relation to risk factor modification, however, Kokkinos et al (1995) showed how women with a moderate level of fitness, had significant reduction in their triglycerides, LDL, blood glucose and blood pressure and a higher level HDL, compared to women at a low level of fitness. Despite the obvious health gains yielded by exercise, a number of Irish surveys suggest that Irish women are less likely to partake in physical exercise than are men. The Kilkenny Heart Project of 1990-1991 (Shelley 1992), suggested that 33% of men and 40% of women were sedentary at leisure. The SLAN survey (Friel et al 1999) suggests that 42% of respondents engaged in some form of regular physical exercise, however more males than females participated in strenuous physical exercise. In the HBSC survey (Friel et al 1999), 53% of children reported engaging in exercise four or more times per week – 45% of girls and 62% of boys. However, participation in exercise appeared to decrease with age especially amongst the girls. Girls' participation in exercise dropped from 59% of 9-11 year olds to 26% of 15-17 year olds and this decrease was most noticeable in social classes 4-6.

It is unclear why the level of physical activity decreases in girls; however, societal values may once again shape the behaviour of young women. Traditionally, girls were excluded from sporting arenas such as the Gaelic Athletic Association, reflecting societal views that men only should partake in physical exercise. These values were also obvious in school curricula, which actively encouraged sport in boys, yet minimised its importance for girls. Although societal views have gradually changed, it is apparent from the above surveys that sports and strenuous physical exercise are still quite dominant features throughout the lives of men. Although young girls appear to enjoy the same amount of physical exercise as young boys, this decreases as girls become older. In addition, the ability of women to partake in regular exercise is frequently dictated by their double burden of work inside and outside the home (Doyal 1995). The responsibility for meal preparation, child-care, informal care giver and house-hold manager still mainly falls to women, therefore leaving little time to take regular exercise or commit to team sports. The expense of suitable gyms or leisure centres may also deter some women from joining, forcing many to adopt more sedentary alternatives. Hence, the double role many women lead, together with their greater risk of poverty, presents gendered obstacles to health and fitness.

- **Socio-economic Disadvantage**

Many studies (SLAN & HBSC, Friel et al 1999) have reported links between low socio-economic status (SES) and unhealthy life-styles whilst others have found strong correlating

evidence between low socio-economic status (SES) and coronary heart disease (Watt 1996, Smith 1997, Kaplan et al 1996, Kennedy et al 1996, Peltonen et al 2000). Although the majority of these earlier studies were focused on men, recent analyses suggest that the effect of socio-economic factors may be different for women and men. In one such Swedish study, Manhem et al (2000) reported that low SES exerted a stronger adverse influence on cardiac risk factors for women than it did on those for men. The study, which included 686 men and 825 women aged 25-64, used an occupation-based socio-economic index to classify SES. According to the researchers, the majority of Swedish women work outside the home, thus allowing the use of such a classification system. Results showed that lipid profile and hypertension levels were not associated with occupational class for men, whereas women with low SES had poorer profiles than professional women. Low SES was associated with higher rates of smoking for both women and men; however, the gradient was steeper for women. Obesity was found to be associated with lower SES for both women and men. Although the use of an occupational classification SES, allowed occupational comparisons to be made between women and men and within women as a group, I believe this classification system may have failed to take into account the double working lives of many women (public and private) or the distribution of wealth within the home. As such, this SES classification system may under-estimate the level of disadvantage attributed to participants. Despite these limitations, this study provides evidence that suggests that the gendered lives we lead may directly impact on our individual cardiac risk. Furthermore, these lives may exacerbate any existing cardiac risk, or diminish intrinsic biological advantage. Considering that low SES is associated with higher cardiac risk and how Irish women are most likely to be disadvantaged (see page 10), a logical conclusion would lead us to assume that Irish women's gendered lives are a major determinant of their cardiac health and illness.

It is evident from the above discussion that women and men share many risk factors for coronary artery disease; however, the prevalence and magnitude of effect is determined and/or influenced by biology and society. Therefore, sex and gender cannot be considered neutral in terms of cardiac risk, nor should either one be ignored, or viewed in isolation from the other. Rather, I consider that these factors interact to affect the cardiac health of women and men and as such should be examined as a complex and combined process. I also believe that biomedical research practices that systematically ignore the social and the feminine should be challenged on the basis that they consistently exclude half the population and many of the determinants of health and illness. In addition, the generalising of male results to female patients should be exposed as unethical, biased and inherently flawed. In the interim however, the male normative frame continues to be used as a measure of the typical cardiac or MI patient, leading to unexamined assumptions about cardiac symptom presentation, diagnosis and mortality. The following section provides further evidence of the inappropriateness of this measure for patients with MI and the dangers of ignoring the feminine in this acute illness scenario.

2.3.4. Gender Differences in Illness Progression

- **Symptom Presentation**

An unfortunate consequence of using the male normative frame is the assumption that MI is a male condition, accompanied by a fixed set of symptoms, diagnostic parameters and recovery potential. Because cardiac illness experiences are considered sex-'neutral', MI symptoms in women are constantly compared to typical symptom experience in men. Androcentric biases have therefore resulted in a cardiac knowledge base that ignores the symptoms of one half of the population, when they don't happen to coincide with the half that matters most. However, numerous studies suggest that although women and men with MI may share some common presentation symptoms, many differences have also been recorded. In contrast to men, women are more likely to present with intra-scapular, right arm, epigastric, or inter-mammary pain as well as associated nausea, fatigue and shortness of breath (Arnstein et al 1996). Women are also less likely to present with complaints of crushing sub-sternal chest pain, whilst male MI presentation is commonly associated with this symptom. In contrast to men, women are less likely than men to have Q wave and ST segment changes and are more likely to have diabetes on their first presentation of myocardial infarction (Arnstein et al 1996). This may partly explain the high incidence of silent MIs in this group (Wenger 1989, Goldberg et al 2000).

Mc Sweeney (1998), in a qualitative study examining illness symptoms in MI patients, interviewed 20 women following their MI. She suggested that no clear pattern of symptom presentation emerged, but all 20 women experienced evolving or prodromal symptoms up to 2-4 weeks prior to their hospitalisation. Only 30% of these participants experienced severe arm or chest pain, whilst 25% reported minimal pain only. The most frequently cited symptoms included diaphoresis (60%), fatigue (55%) and generalised chest discomfort (50%). Although these symptoms also occur amongst male patients, the evolution and severity of these symptoms are a variation from 'typical' presentation. In a more recent study, Mc Sweeney et al (2003) carried out a quantitative study that examined the incidence of prodromal symptoms in a larger group of female MI patients. Approximately 95% of the participants (N=515) reported experiencing prodromal symptoms, such as extreme fatigue. When questioned about the two most intense symptoms, the participants were most likely to cite fatigue and sleep disturbances. Only 43% of women in this study experienced chest discomfort and were more likely to describe its presence in words other than 'pain.' Other researchers have also reported that women describe chest pain differently (Canto et al 2000, Shlipak et al 2001), or that it was of minimal significance (Meshack et al 1998, Miller 2002). Although, the existence of prodromal symptoms is suggestive of a slow evolving presentation of symptoms amongst women, few recent studies have examined the presence of this phenomenon in men also. It is therefore possible that men may also experience these

symptoms and that the prevailing male normative frame is in need of review. However, the finding that women use descriptors other than pain to describe their chest discomfort is clinically very important. If researchers, nurses and medical practitioners continue to search predominantly for 'male' symptoms, such as central chest pain, diaphoresis and breathlessness, women will be overlooked as possible victims of MI. Furthermore, women themselves will dismiss their symptoms, if the prevailing image of MI equates to symptom experience in men.

- **Diagnosis**

Another unfortunate consequence of the male normative frame is that diagnostic testing is likely to have been developed based on research carried out on men, resulting in difficulties and reduced accuracy when these tests are applied to women (Cochrane 1992). As well as having smaller hearts and thoracic cavities than men, women also have smaller coronary arteries (Wingate 1991, Cochrane 1992) and different myocardial remodelling processes (Anderson & Kessenich 2001). Other differences such as oestrogen fluctuations, greater heart rates and ejection fractions, are reported to cause female hearts to respond differently to diagnostic tests (Wenger 1992). Roger et al (1997) suggest that electrocardiographic stress testing in women has a lower sensitivity and specificity when compared with men. This is not only because of sex differences in prevalence and extent of the disease, but also because women are less likely to have optimal heart rate responses demanded by the tests and are susceptible to repolarisation abnormalities. Cerqueira (1995) add that women on hormone replacement therapy may experience a false positive ST segment depression, thus limiting the specificity of exercise stress testing in this group. In contrast, exercise echocardiography may be of significant diagnostic value in women. Marwick et al (1995) suggest that this procedure is more specific than exercise electrocardiography and is considered a more effective approach to diagnosis of coronary artery disease in women. Shaw et al (2000) advocate a sequential approach to diagnostic testing in women, suggesting that it is both reliable and cost-effective.

- **Mortality**

Despite the gendered perception of coronary artery disease, women die of MI too and although experiencing initial cardiac presentation approximately 10-15 years later than their male counterparts, a growing body of evidence suggests that women are more likely than men to suffer from chronic cardiac symptomology and fare worse following admission to hospital for acute myocardial infarction. Data extrapolated from as far back as the Framingham Heart Study suggest that female gender contributes to increased mortality risk and is independent of other risk factors (Kannel & Abbott 1987). In the Framingham study, which followed (N=6,507) patients (n=3433 females & n=3074 males), the initial case fatality rate for MI was greater in women than in men. Furthermore, within one year of infarction, 44%

of women died compared to 27% of men. Forty percent of women compared to 13% of men had reinfarction within one year and women were more likely to suffer post infarction stroke and pericarditis (Kannel & Abbott 1987). Similar findings were reported from Tofler et al (1987) and the Multicenter Investigation of the Limitation of Infarct Size (MILIS) study suggesting a more adverse prognosis in women after an MI than men. In-hospital mortality was 13% for women in comparison to 7% for men. Cumulative mortality at 4 years was 36% for women in comparison to 21% for men. Further evidence emerged from GISSI (1987) suggesting that women had a greater 1-year mortality rate than men (29.8% versus 15.2%).

More recent international studies support the results of these earlier findings. In MITI, (Maynard & Weaver 1992) in-hospital mortality was greater for women (16%) than for men (11%). Women also experienced a greater one-year mortality and re-infarction rate, than their male counterparts did. Results from this study suggest that the higher mortality rate in women post myocardial infarction may be directly linked to the lower likelihood of women receiving acute cardiovascular interventions. In this community hospital trial, even after adjusting for several clinical and demographic variables, women were twice as likely to die following a myocardial infarction than men; however, twice as many men received thrombolysis, coronary angiography, coronary angioplasty and coronary bypass grafting than women. Results from the Global Utilisation of Streptokinase and TPA for Occluded Arteries (GUSTO – 1 1993) and the International Study of Infarct Survival (ISIS-4 1995) trials confirm a greater short and long-term mortality in women. Further evidence also emerged in the Fibrinolytic Therapy Trialists meta-analysis study (1994), which examined early mortality and major morbidity results from all randomised trials of more than 1000 patients. These results show women to have 60% greater mortality than men in the first 35 days following myocardial infarction.

In the GUSTO-1 trial (Weaver et al 1996), the unadjusted 30-day mortality was greater for women than for men (13% versus 4.8%). In TIMI II (Becker et al 1994), women treated with thombolytics had a greater 6-week morbidity and mortality rate than their male counterparts did. Results from the NRMI 2 (Vaccarino et al 1999) describe a higher in-hospital mortality rate for women than for men, in patients <70years. The Worcester Heart Study (Vaccarino et al 2001), demonstrated that younger women <60yrs, had a greater 2-year mortality rate than their male counterparts, whilst investigators in the RESCATE trial (Marrugat et al 1998), describe a greater mortality rate for women at 28 days and 6 months.

Biological reasons put forward for the obvious gender differences in mortality rates, include a greater severity of MI amongst women than men, with many published studies describing a higher Killip class among female patients (Maynard & Weaver 1992, Becker et al 1994, Weaver et al 1996, Vaccarino et al 1999, Vaccarino et al 2001). In addition, women tend to be older than men are when experiencing their first myocardial infarction and more likely to suffer with other chronic illnesses, in particular, diabetes. However, although gender differences in

mortality rate lessen when controlling for increasing age and the burden of co-morbidities, they do not disappear. Subsequently, the consensus from these international studies would suggest that women fare worse following hospitalisation for myocardial infarction than their male counterparts and signifies a need to delve beyond the realm of biomedical reductionism for greater insights and understanding.

In summary, the biological differences between women and men suggest that illness onset and pattern of disease is also quite different. However, the continued use of the male anatomy and experience of illness as the normative frame ensures that women will receive either inappropriate or sub-optimum treatment for conditions such as MI that are common to both sexes. It is unrealistic and unfair to women who require cardiac investigations, to base their outcomes and test values on what has been learned from a traditionally male dominated arena of research - male dominated not only by who was being researched, but also by who was conducting the research (King & Jensen 1994). The practice of trying to squeeze women into the prevailing male model is therefore unacceptable and potentially detrimental to women's cardiac health. Moreover, MI becomes a condition synonymous with a male victim and a male set of illness parameters, which invariably excludes and dismisses as irrelevant, the female experience.

Lockyer & Bury (2002) suggest that this biomedical 'gendering' of the MI condition, has prevented women from reaching their optimum cardiac health potential and has resulted in biased practices amongst those caring for women with MI. In gendering this disease, education and health promotion initiatives may lack gender sensitivity and be targeted towards men, with little regard for the gender differences in illness behaviour and presentation. Women may interpret these cardiac health promotional measures, to protect the hearts of men and may be less likely to modify their own lifestyle in a cardio-protective manner (Sharp 1994). Furthermore, in the event of an acute cardiac event, the distorted gendered image of the typical cardiac patient may impede the decision to seek early medical assistance, leading to gender-specific MI care-pathway delays.

2.3.5. The Gendering of Delay

One published definition of 'care-pathway' as related to myocardial infarction, is the amount of time that elapses from initial symptom onset to the commencement of treatment in a hospital (Dracup & Moser 1991). It is widely accepted that *earliest* intervention and treatment with thrombolytic agents or primary angioplasty along this pathway, can prevent death, reduce incidence of life threatening dysrhythmias and prevent extension of myocardial infarction (GISSI-1 1987, ISIS-2 1988, Handley & Swain 1994, Dempsey et al 1995). However, mortality is halved only when thrombolytics are administered within 1-2 hours of symptom onset, with much less effectiveness when administered after 6 hours from onset (GUSTO-1 1993). Published guidelines by the European Society of Cardiology (1996) and the British Heart

Foundation (1994) on the management of patients with myocardial infarction, propose as an audit standard a 'call-to-needle' time of 90 minutes. This is calculated from the time the patient calls for medical help, to the initiation of revascularisation therapy. Furthermore, the Department of Health & Children suggests that the 'door-to-needle' time should be no more than 30 minutes (Department of Health & Children 1999:96). This is calculated from the time the patient presents to Accident & Emergency, to the initiation of revascularisation therapy. The pathway of care to the initiation of medical intervention is therefore an extremely important determinant of outcome both for survival and limitation of infarct size. Unfortunately, the major delay existing along this pathway of care, appears to be in the pre-hospital arena, where patient indecision and/or hesitancy frequently results in protracted delays to life-saving treatment. Patient socio-demographic characteristics that appear to increase delays include advancing age, minority groups, low income and insurance coverage (Dracup & Moser 1997, Goff et al 1997, Brophy et al 1998, Lee 2000). However, contradictory evidence is found regarding whether or not delays are gender-specific, with some researchers suggesting no gender difference exists (Kundenchuck et al 1996, Dracup & Moser 1997, Goff et al 1999, Goldberg et al 2000) whilst others report that women experience longer delays than their male counterparts do (Clarke et al 1994, Magid et al 1997, Brophy et al 1998, Foster & Mallick 1998, Meischke et al 1998, Canto et al 2000, Sheifer et al 2000).

In an attempt to tease out this somewhat conflicting evidence, many researchers have examined the pre-hospital experiences of patients with MI and provided valuable insights into gendered behaviour. In presenting their results, many researchers have used behavioural models as frameworks to support their findings. The most frequently employed model appears to be Levanthal et al's (1980) Self Regulation Model of illness, which provides a useful structure for examining in greater detail the adaptive behaviour that occurs during acute illness onset (Dempsey et al 1995, Dracup et al 1995, Meischke et al 1995b, Foster & Mallick 1998, Meischke et al 1999, Rosenfeld & Gilkeson 2000). This model identifies three stages of behaviour modification which include (1) the representation of health threat (2) the action plan or coping stage and (3) the appraisal stage. The model presented by Levanthal et al (1980) therefore provides a useful framework for exploring the decision-making processes involved in seeking help for cardiac symptoms.

Labeling of a health threat appears to be a key factor in determining delay times in patients with myocardial infarction. Numerous studies have suggested that delay times were lowest when patients identified cardiac symptoms as a health threat (Johnson & King 1995, Meischke et al 1995b, Dracup & Moser 1997) as patients were more likely to seek medical help earlier and more likely to use emergency services. Foster & Mallick (1998) reported such findings in a study examining the differences in referral behaviour patterns of women and men who had experienced cardiac-related chest pain. Utilising a comparative descriptive design, this study compared the pre-hospital admission behaviours of women and men, with

symptoms of acute chest pain. A sample of 12 men and 12 women were selected following admission to coronary care. Data on illness behaviour were provided via semi-structured interviews. As these were retrospective interviews distortion of information because of memory impairment or illness may have existed. Quantitative data were also extrapolated from medical records and relevant documentation.

The findings from this study suggest that women delayed longer in seeking help for cardiac pain. Men were twice as likely as women to arrive into casualty within 6 hours of symptom onset, thus receiving optimum benefits from thrombolytic therapy. Women who arrived later than 6 hours following symptom onset, either received minimal benefits from thrombolytic therapy, or were outside the window for therapeutic opportunity. The study revealed that women were less likely to attribute chest pain to a cardiac origin and were unlikely to believe that they were having a heart attack. This belief that one was having a heart attack correlated with a shorter pre-hospital delay. Those who minimised their symptoms to a benign origin were more likely to delay in seeking medical help - 33% of the female participants waited over 24hrs before seeking medical treatment. These findings are supported in a study carried out by Meischke et al (1995a), where 'being male', was positively related to the belief that one was having a heart attack. Meischke et al (1995a) add that if society perceives coronary artery disease as a condition affecting men only, then women are likely to be influenced by these beliefs and less likely to identify symptoms as a threat to health. An important factor, which positively influenced patients' decision to seek help, was the recommendation of a layperson. However, it is not clear from this study whether lay consultation times differed between the two groups.

As few studies rarely report longer delays associated with men, it is important to consider factors that may influence the labeling of MI symptoms by women. Evidence of inappropriate labeling during myocardial infarction, is evident in the quantitative study carried out by Meischke et al (1999). Telephone interviews were conducted with 862 women older than 50 years of age, in Washington State. Although involving a large sample, Meischke et al (1999) failed to include women of ethnic origin thus limiting the generalisability of these results to white women in Washington. Furthermore, although seeking demographic information on each of the participants, no reference was made to this potential variable. As socio-economic group has been linked to delays in treatment seeking behaviour (Dracup et al 1997), the relationship between socio-economic group and appropriate labeling of symptoms may have contributed important data to this area. Hypothetical symptom scenarios guided open and closed-ended questions during interviews. These gleaned information regarding intended coping strategies, labeling of hypothetical scenarios, perceived risk of MI, knowledge of MI symptoms, medical and family history of MI as well as demographics. The use of hypothetical scenarios, although yielding important information, may not accurately reflect women's responses to real life situations. However, the findings regarding the relationship between

symptom labeling and coping responses are quite consistent with other comparative studies (Johnson & King 1995, Dracup & Moser 1997, Meischke et al 1998).

The findings of this study suggest that only 18% of women knew that shortness of breath and nausea might be symptoms of heart attack whereas 65% of women labeled chest pain as a heart attack. Intended coping strategies suggest that women felt greater urgency to seek medical care for chest pain than for shortness of breath or nausea. These findings suggest that women may mislabel atypical symptoms as less threatening than typical MI symptoms, which may result in inappropriate coping strategies. However, although the recognition of symptoms as having a cardiac origin related to higher frequencies of prompt coping strategies, less than 20% of women stated that calling emergency services, or going to A&E department, would be their initial response. Most women suggested that their initial response would be to either 'rest/wait' or 'contact a medical professional'. Other findings suggest that women who had acquired gendered specific information regarding myocardial infarction, were much more likely to label cardiac symptoms appropriately. The main strengths of this study are the yielded insights into illness behaviour of women during myocardial infarction. Although employing hypothetical scenarios, this study provides support for the importance of gender specific information regarding symptom presentation and appropriate emergency response.

Delay in seeking treatment was also associated with ambiguity of symptoms in other studies (Johnson & King 1995, Meischke et al 1995a), suggesting that women may have difficulties recognising symptoms as being cardiac in origin, if public health messages focus exclusively on typical MI symptoms. As women are more likely to experience 'atypical' MI symptoms (nausea, shortness of breath), experienced symptoms are less likely to match expectations of MI symptoms (Gregor et al 1994, Meischke et al 1995a, Goldberg et al 1998). Attempts to contact a medical professional during a cardiac emergency have also been associated with significant delay times in treatment onset (Dracup & Moser 1991, Ho 1991, Dracup et al 1995). According to Leventhal et al (1980), the individual, on assigning a health threat label, will modify coping methods to deal with the threat (coping stage). The coping plan may include consideration of many options such as calling emergency services, seeking medical or lay advice, initiating self-help or totally denying the problem. If women do not perceive MI symptoms as a threat, or if they mislabel their symptoms as benign, coping mechanisms are less likely to be deliberate.

Evidence of less deliberate coping mechanisms was also reported in a study by Dempsey et al (1995). In this study, the researchers also used the Self Regulation Model of Illness presented by Leventhal et al (1980), as a framework to examine women's decision to seek care for symptoms of acute myocardial infarction. The qualitative method of grounded theory was employed to explore the pre-hospital experiences of women during this acute cardiac

event. Sixteen women aged between 42 and 85 years, who were nursed in a coronary care unit, participated in the study. Each participant however, had experienced a myocardial infarction within the previous 72 hours. Data collection consisted of individual interviews conducted with each participant, within a time frame of 8-72 hours following admission. This time frame was chosen to allow patients the opportunity to resume physiological stability. Again, as in Foster and Mallicks' study (1998), recollection of specific details may be distorted with time and the most accurate data may only be recorded on admission to hospital. However, due to ethical and physiological considerations, time must be allowed for patients to regain physiological stability. For this reason one must question Dempsey et al (1995) consideration of 8 hours post myocardial infarction as a suitable time period for interviewing these critically ill patients.

Areas explored during interview included the perceived meaning of symptoms, perceived origin of the symptoms, thoughts and behaviour following symptom interpretation, identification of any person with whom the participant consulted about symptoms, details regarding decision to notify this individual and the behaviour of the individual who was consulted. Additional questions explored the participants' understanding of 'heart attack' and its symptoms, and their knowledge of heart disease in women. The analysis of data allowed two core categories to emerge that included (1) maintaining control and (2) relinquishing control. Although control theory was not conceptualized at the onset of the study as a reason explaining the phenomenon of delay, participants' desire to maintain control over the situation emerged as the most significant factor determining delays.

Results also suggest that perceived insignificance (mislabeling of illness threat) accounted for the majority of delays in seeking treatment. The mean delay time from onset of symptoms to arrival at hospital was 5.4 hours. Women failed to interpret the symptoms as having a cardiac origin, which resulted in delayed lay consultation. Many factors emerged as contributing to the misinterpretation of symptoms. Many women had abstract knowledge regarding heart disease, believing that it occurred mostly in men and that it would have very typical symptoms. All participants reported 'not knowing', or being 'unsure', about whether or not heart disease was as serious for women as for men. Many women in an attempt to maintain control began to implement strategies to resolve symptoms (coping stage). These included resting, having a bath, changing position, taking medication, being distracted or drinking cold fluids. Others denied or trivialised the symptoms attributing them to a benign cause. Other factors influencing the trivialising of symptoms included past symptom experience, concern for others, commitments to family or job and the potential costs of taking the symptoms seriously.

When coping strategies failed to resolve symptoms, all 16 participants began to relinquish control and sought lay consultation (appraisal stage). No participant obtained medical advice

without first seeking lay consultation. All women sought medical consultation based on the recommendations of the lay consultation and depending on his/her response, this greatly affected the delay times to treatment. Similarly, in the study by Foster & Mallick (1998) lay consultation was considered an important factor in determining help seeking delays. Fourteen respondents suggested that the initial response of the layperson was to seek immediate medical advice by either driving to a hospital or calling an ambulance. However, two of the lay consultants delayed in their recommendation to seek medical advice – one of these participants delayed 12.5 hours before receiving medical treatment. The strengths of the study by Dempsey et al (1995) lie in its ability to explore the complex and dynamic processes involved in women's decisions to seek help during an acute cardiac event. Although maintaining psychological control has been associated with positive health gains in some chronic conditions (Taylor et al 1991), the results of this study suggest that attempting to maintain psychological control during myocardial infarction, may lead to delays in life-saving treatments. Dempsey et al (1995) also reaffirm and expand Levanthal et al's (1980) theory of self-regulation. Many of the three-stage process (labeling, coping and appraisal) outlined by Levanthal et al (1980) are also evident here.

Another qualitative study examining illness behaviour in women during a cardiac event was carried out by Rosenfeld & Gilkeson (2000). A longitudinal descriptive design was used to explore the meaning of illness for women with coronary artery disease. The study consisted of a purposive sample of six women who were hospitalized for coronary artery disease. Three of these were scheduled for coronary bypass surgery and three were scheduled for coronary angioplasty. Three women had experienced a myocardial infarction and for three women this was their first cardiac event. A series of two focused semi-structured interviews were completed – one whilst the women were still hospitalised and the other some 3 months later. It is not reported why the researchers chose a three-month period to complete the second round of interviews; however, in light of three women under-going cardiac surgery, this timeframe might have been selected to allow for post-operative recovery. Grounded theory methodology guided the collection and analysis of data. The interviews consisted of three open-ended questions, which focused on illness meaning, The data from the second round of interviews identified developments of the initial categories and the emergence of new ones. Although a theory appears to have emerged, the researchers fail to state whether theoretical saturation occurred at this stage.

The process that described how the meaning of illness evolved over time was called 'seeking understanding'. This process commenced with the onset of symptoms during which time, women recall experiencing three responses - denial, acknowledgement and being scared (representation of illness threat). Denial was a response common to all participants and included coping mechanisms such as self-help, ignoring symptoms, or attributing them to non-cardiac origins. Denial is a symptom also outlined in Dempsey et al's (1995) study and is

thought to be a mechanism that women use for maintaining control over a situation. Rosenfeld & Gilkeson (2000) suggest that an examination of women's role in society may provide additional insights into the use of denial. She suggests that the denial of symptoms of other illnesses may be an adaptive response during child-rearing years, when women, balancing multiple roles have little time to be ill. Rosenfeld & Gilkeson (2000) offer no supporting evidence for this conclusion; however, further study into this area may yield less-speculative data. When coping mechanisms failed to alleviate symptoms, participants began to acknowledge that symptoms might be associated with the heart. This is similar to the coping and appraisal stages outlined in Levanthal et al (1980) Self Regulation Model of illness. Fear was a response associated with pending procedures; however, Rosenfeld & Gilkeson (2000) provide very little other detail regarding this experience in their participants.

Once the participants received medical assistance, they experienced further responses, which included 'naming', 'seriousness of illness', 'comparing self with others' and 'causality'. 'Naming' describes how the participants referred to their condition. Initially they used words such as 'it', 'this' and 'a problem', but avoided using cardiac terms. During the second round of interviews, the participants readily referred to their illness using cardiac terms. 'Seriousness of illness' relates to the acknowledgement of the life-threatening nature of their condition, although comments about this only emerged during the second round of interviews. 'Comparing self to others' was an attempt by participants to glean meaning from their illness by comparing themselves to others. The participants constantly compared themselves to men who had experienced cardiac illness and many of their comments were a dramatic example of how the male experience of cardiac illness is the dominant public image. 'Causality' refers to the participants' need to find out why the condition occurred in them, when it really occurs only in men. As participants were at different stages in the course of their conditions, it is difficult to estimate from this study when the participants began to 'name' or 'own' their condition in relation to their illness course. The medical condition of each of the participants would also appear to affect the interpretation of findings. Surely, the meaning of illness for a patient undergoing angioplasty was quite different from that of a patient undergoing coronary bypass surgery. In order to eliminate many of these confounding variables, it may have been prudent for the research team to select their participants with comparable illness courses. This study, although somewhat clumsily presented, provides some important contributions to the meaning of cardiac illness for women.

While conflicting evidence exists about the gendered nature of pre-hospital MI delays, the findings from the studies discussed, demonstrate that women's decision to seek help quickly is adversely affected by the gendering of the condition. With the gendering of MI, women appear to have difficulty labeling their 'atypical' symptom presentation and seem unable to identify their personal susceptibility to the disease, until symptoms become quite severe. Coping strategies are frequently protracted, as women struggle to interpret their condition

against typical gendered parameters. However, female patients are not alone in succumbing to these male messages, as the practices of many nurses and doctors frequently reflect a gender-blind or biased approach to care.

2.3.6. The Gendering of Care

Treating women and men similarly, without considering gender and sex differences, explains why difficulties in diagnosis may occur in women with coronary artery disease and why chest-pain in women may be considered benign. Conversely, treating women differently when there is no reason to do so may help to explain the greater mortality rates in women following hospitalisation for myocardial infarction. Evidence of 'different' treatment for women exists in all areas of in-hospital care, from initial cardiac assessment, to the initiation of life-saving therapies. However, the accurate assessment of MI symptoms by health care professionals is of particular concern as it greatly influences the timing and quality of potentially life-saving treatment. Symptom assessment may also be the initial point where health care staff members inappropriately treat women (Shaw et al 1994).

Arslanian-Engoren (2000) carried out a qualitative study to examine the triage decisions made by A&E nurses for patients with symptoms suggestive of myocardial infarction. Her sample included 12 nurses from four different hospitals. Four focus group sessions were conducted and content analysis was performed on the yielded data. A pre-established set of questions guided the discussion, which included questions related to the prioritising of patient cues in relation to triage decisions. Other questions attempted to glean information in relation to the participants' own knowledge of symptom presentation as well as the treatment of both sexes. Results of the study show that nurses held different perceptions regarding the significance and likelihood of MI for female and male patients seeking evaluation and treatment. In addition, nurses revealed that MI was not the first considered diagnosis for middle-aged women presenting with chest pain. The results suggest that A&E nurses must assess their own triage practices in an attempt to minimise possibilities of gender blindness and its influence on patient care. It is also imperative that nurses are made aware of gender differences in presentation scenarios, so that a lack of knowledge may be eliminated from the possible causes of sub optimal treatment of women. An interesting slant to this study may have involved a comparison of female and male nurses' perceptions, again providing much needed insights into this area.

Evidence of biased care was also found in many treatments associated with MI. A retrospective quantitative study carried out by Clarke et al (1994), investigated the treatment received by women and men during an acute cardiac event. The researchers retrieved retrospective data from a myocardial infarction register that had prospectively identified all

patients with symptoms suggestive of a myocardial infarction. Extensive records regarding management and outcome were detailed. For this study, data were collected on the following nine variables; age, route to hospital, time to arrival in hospital, definite diagnosis, ward of admission, treatment with thrombolytics, severity of myocardial infarction, hospital interventions and treatment on discharge. The study was carried out over a one-year period and in total 7850 patients, of whom 2983 (38%) were women, were admitted with suspected myocardial infarction. Results of this study showed that even when adjusting for age, women with acute myocardial infarction did not receive the same treatment as men. Admission to coronary care was associated with an increased likelihood of receiving thrombolytic therapy and men (N=4867, 51%) were more likely to be admitted to coronary care than women (41%). For both men and women, the likelihood of admission to coronary care decreased as they got older; however, older women were 15% less likely to be admitted there than older men. The study also found that the severity of infarction and mortality rate was greater in women than in men. Despite this, women (23%) were less likely than men (41%) to be discharged taking prophylactic aspirin or beta-blockers.

These findings demonstrate that a gender bias existed in the treatment of patients with myocardial infarction. If the only discriminating factor in treatment was age, then men and women of the same age should have received similar treatments. In this study, younger men and women had an equal chance of being admitted to coronary care; however, for the older age group the picture was somewhat different. Older men appeared to receive better treatment than older women did. Patients with the highest mortality rate (elderly women) were the very people being denied access into coronary care and provision of thrombolytic and discharge drug therapy. These results however, maybe in part due to the late presentation of women to A&E, as well as underlying co-morbidity in women. However, Clarke et al (1994) also suggest that although prescribed treatment on discharge may be influenced by co-morbidity, the denial of fundamental prophylactic therapy to so many women demands that further investigation be carried out into this area. In summary, this study suggests that women are denied access to thrombolysis and treatment opportunities partly due to pre-hospital hesitation and partly because of an apparent gender bias within the hospital setting.

A similar Canadian study, carried out by Brophy et al (1998), quantitatively examined the various components of the delay to thrombolytic treatment for patients with acute myocardial infarction. Both hospital and patient characteristics that related to delays were identified. The study setting included forty acute participating hospitals in Quebec and involved data from 1357 patients who were part of an MI registry. Each patient admitted to a participating hospital with a diagnosis of MI was entered prospectively into this registry and data were obtained regarding symptom onset, arrival into hospital, thrombolytic therapy and other clinical information. At discharge a systematic chart review was performed, which identified the resources used and the final diagnosis. Results of this study are comparable to those

detailed by Clarke et al (1994) and reveal that patient hesitation was the major factor of delay in treatment and this delay was most noticeable in women and older patients. Once in hospital, women and the elderly experienced longer medical assessment and thrombolytic therapy delays than any other group. Brophy et al (1998) suggest that as women tend to be older than their male counterparts and experience longer pre-hospital delays, the additional in-hospital delays experienced by this group amounts to double jeopardy. As such, protracted in-hospital delays to treatment may explain the higher in-hospital mortality in this group (Brophy et al 1998). The strengths of the above studies include the large sample sizes employed and the inclusion of various geographical regions. It may therefore be possible to generalise these results to other local patient populations. The information gleaned from these studies is also unusual, as few other studies have focused on both patient and hospital components of care pathway delay. The limitations of both of the above studies should also be noted and concern the lack of external quality proofing of data entries. With such large sample sizes, the possibility of random error and 'missing' data might have limited the impact of conclusions. However, both studies highlight the fact that patient hesitation is only partly to blame for care pathway delays to MI treatment, which are further compounded by hospital delays and treatment biases.

Further evidence of bias emerged in the Atherosclerosis Risk in Communities (ARIC) study. In this study, Weitzman et al (1997) explored the gender, racial and geographic differences in the performance of cardiac diagnostic and therapeutic intervention for patients post myocardial infarction. Researchers demonstrated, that throughout the four American states included in the study, women were less likely to receive thrombolysis, coronary angiography, coronary angioplasty or coronary artery bypass surgery. Results also suggested that when women underwent cardiac surgery, they tended to be typically sicker than men, often required emergency surgery and were referred for revascularisation at a more advanced and symptomatic stage of illness (Khan et al 1990, Weintraub et al 1992, Weintraub et al 1993). Similar findings are associated with the treatment of women with coronary angioplasty. Women demonstrate excellent long term prognosis following successful angioplasty; however, procedural mortality for coronary angioplasty is three times higher in women than in men (Kesley et al 1993, Bell et al 1995). The difference in procedural gender mortality may reflect difficulties of this procedure in women, however it may reflect sub optimal or delayed care – i.e. women may have extensive illness before angioplasty is deemed appropriate for them.

Gender differences in mortality in the post-thrombolytic era may reflect this bias in the treatment of women and men with myocardial infarction. Furthermore, the under utilisation of diagnostic and therapeutic cardiac modalities in women may also explain the gender differences in morbidity and mortality. Results from the Myocardial Infarction Triage and

Intervention (MITI) registry (Kudenchuck et al 1996), suggest that the higher mortality rate in women post myocardial infarction may be directly linked to the lower likelihood of women receiving acute cardiovascular interventions. In this community hospital trial, even after adjusting for several clinical and demographic variables, women were twice as likely to die following a myocardial infarction than men; however, twice as many men received thrombolysis, coronary angiography, coronary angioplasty and coronary bypass grafting than women.

Apparent gender bias within the hospital was also evident in one of the few Irish studies investigating the care management of MI patients. In 1992, the Irish Heart Foundation carried out the first national perspective of acute coronary care in the Republic of Ireland (O'Callaghan et al 1995). This study, which involved a one-week national census of forty coronary care units, examined the numbers, diagnosis and characteristics of patients admitted to coronary care facilities. In total, 412 patients were admitted during the time-period of which 108 (39 women and 69 men) experienced myocardial infarction. Data in relation to the administration of thrombolysis and time intervals from onset of symptoms to admission were recorded. Of particular interest are the findings related to time delays to administration of thrombolysis. CCU was the main area of thrombolytic administration and overall median time delays from onset of symptoms to CCU admission were 4 hours, with 65% of MI patients admitted within 6 hours. However, of great significance is the finding that females in rural areas with MI symptoms tended to reach hospital more rapidly (3hrs) than rural males (4hrs). This phenomenon appears to be unique to Irish rural women, as no other documented comparative study has reported a faster response rate in female patients. These results would initially suggest then, that women should be more likely than men to receive thrombolytic therapy, due to their earlier presentation. However, despite their rapid presentation, Irish women received thrombolysis less frequently than Irish men (25% versus 40.6%), yet no explanation was offered for this paradox. Furthermore, none of the patients receiving thrombolysis died during admission, whereas 18% of those who did not receive thrombolysis died. Women experienced a substantially greater mortality rate than their male counterparts but this result failed to reach statistical significance (17.5% versus 8.7%). The available data make it impossible to ascertain whether the high mortality rate for women was associated with reduced thrombolytic administration rate; however, no other explanation is provided by the research group.

A follow-up Irish census was carried out in 1994 out by McGee et al (1996). Of the 950 patients admitted during this 7-month census, 70% had confirmed myocardial infarction. In total, 58% of these patients received thrombolysis, with 'delay to treatment' accounting for 25% of decisions cited for non-administration of thrombolysis. Although 32% of the admitted patients were female, no sub-group analysis by gender was carried out, nor a discussion published related to gender issues. This omission of detail and analyses is quite alarming,

considering the obvious in-congruencies of the previously published results. An in-depth critique of these two studies is presented in chapter 3. Since 1994, there have been no further large published studies regarding thrombolytic administration in Ireland, thus the issue of gender-differences in thrombolytic receipt remains unresolved.

2.4. Conclusion

The results of exclusionary research practices and the prevailing biased system of knowledge, has led to the gendering of MI and a cardiac health service that has been designed for men. As such, lay and professional information about heart disease is both limited and distorted. As coronary artery disease continues to be the main preventable cause of death in Irish women, it is imperative to deconstruct scientific neutral assertions that gender this disease and acknowledge the impact of both biological and social determinants of cardiac health. Biomedicine's closed system of knowledge production and claims to the only source of legitimate cardiac knowledge must also be challenged. Public health and feminist researchers demand that this closed system be thrown open and other ways of knowing be validated as legitimate sources of knowledge production (Doyal 1995, Krieger & Zierler 1995). Doyal (1995) suggests that if death can only be explained in the wider social context then the complexities of health and illness must warrant the same inquiry. She asserts that to understand women's cardiac health and illness experiences, traditional biomedical research and epidemiological practices must change.

> 'Instead of identifying diseases and then searching for the cause, we need to begin by identifying the major areas of activity that constitute women's lives. We can then go on to analyse the impact of these activities on their health and well-being.'
>
> (Doyal 1995: 1)

A blind acceptance of the prevailing biased method of knowledge production, which perpetuates the gendering of coronary artery disease, is considered discriminatory and an infringement of women's right to optimum cardiac health. However, in 1999, the Department of Health & Children provided an opportunity to correct the current deficit in our knowledge about Irish women's cardiac health and in its recommendation R7.4, it states

> '... The time to treatment of patients with acute sustained chest pain and the reasons for delays in accessing care must be identified This baseline information should be used to establish targets for response times and for times to reach coronary care.'
>
> (Building Healthier Hearts 1999: 86)

In the absence of any published nursing literature regarding Irish women and heart disease, I considered this a unique opportunity to contribute to our knowledge in this previously un-

explored area of care. Hence, the aim of this study was to identify any gender specific care-pathway delays amongst women and men with myocardial infarction and in so doing, to assist in detailing the baseline information as required in recommendation 7.4. However, I was also eager to position women at the centre of the research inquiry and in adopting such an approach I hoped that women would be actively engaged in the production of knowledge, through the voicing of their health and illness experiences and by defining their own health needs. I also believed that greater insights might be sought from the integration of multidisciplinary research efforts, the mixing of methods and the validation of 'other' ways of knowing. Indeed, I believe that a failure to combine research paradigms has limited the true potential of cardiac research and has led to the biased assumptions outlined above. Crossing interdisciplinary paradigmatic boundaries and validating 'other' ways of knowing, must surely offer the best opportunity for enhancing the knowledge base and cardiac health potential of both women and men. Accordingly, the present study was designed using a 'mixed method' approach, to ascertain whether women and men with MI had similar care pathway timeframes to treatment.

Chapter 3: Study Design

3.1 Introduction

In this chapter, the study research questions are explicated and the design of the study outlined and justified. In addressing the research questions I considered that a feminist theoretical framework would assist me to acknowledge the legitimacy of women's world-views, thereby resisting the temptation blindly to follow positivist assertions of a single objective reality. Although somewhat instinctive, I considered that a total rejection of positivism, objectivity and value neutrality so associated with biomedical inquiry, was potentially destructive, serving only to limit the knowledge base from which women's cardiac health research may draw. What follows is a brief examination of feminist epistemology, methodology and 'methods', with criticisms of biomedical inquiry further developed. Triangulation is also discussed as a method for uncovering the many facets of cardiac health and as an endorsement of feminist epistemological assumptions of multiple realities.

3.2. Research Questions

(1) Do women and men with myocardial infarction in Dublin hospitals, have similar care pathway timeframes from onset of symptoms, to the receipt of reperfusion therapy and/or a bed in CCU?

Aim:

- To identify pre-hospital and in-hospital care pathway timeframes for women and men with symptoms of myocardial infarction, attending Dublin hospitals.

(2) If women and men attending Dublin hospitals with MI do not have similar care-pathway time frames, then what is the effect of pre-determined demographical factors on these timeframes?

Aim:

- To assess the effect of selected factors on care pathway timeframes for women and men with myocardial infarction, attending Dublin hospitals. These factors include gender, age, health insurance status, mode of referral, mode of admission and admitting hospital.

(3) What reasons might exist for identified gender-specific care-pathway delays?

Aim:

- To explore the reason for one identified gender-specific care-pathway delay, from the perspective of women attending Dublin hospitals with MI.

3.3. Feminist Ways of Knowing: A Challenge to Nursing Epistemology

> 'It has been assumed that anything and everything worth understanding can be explained or interpreted within the assumptions of modern science. Yet there is another world hidden from the consciousness of science - the world of emotions, feelings, political values; of the individual and collective unconsciousness; of social and historical particularity...part of the project of feminism is to reveal the relationship between these two worlds – how each shapes and forms the other.'
>
> (Harding 1986:245)

Copnell (1998) suggests that nursing knowledge is currently derived from three different world-views, which she identifies as positivism, humanism and critical theory. These three separate paradigms are considered to exist together in an uneasy alliance within nursing and as such consistently lead to dissonance and unrest within the profession (Meleis 1987). Although I agree that it is desirable for knowledge to emanate from various perspectives, it is also considered crucially important to the development of a cohesive profession, that this knowledge is integrated (Meleis 1987, Bennett 1994). Nursing has its strongest historical links with medicine, a profession that has a preoccupation with disease and one from which nursing has drawn much of its knowledge base. As previously mentioned (see section 2.3.1), this knowledge has been derived for the most part from positivist inquiry with the validation of hard objective data as the only legitimate sources of knowledge. Although nurses have begun to search for other legitimate knowledge sources, many continue to operate in an illness and disease orientated environment and frequently have difficulty in vocalising or making visible the knowledge base that is distinct to nursing practice. This has led to some professional frustration and the temptation to disregard the intangible and invisible components of nursing's humanistic characteristics. Instead, we draw easily on the articulated dominant discourse of medicine, which is synonymous with power and reflective of patriarchal social values (see page 12). Oakley (2000) calls for nursing to examine knowledge claims in the pursuit of the most legitimate ways of knowing critically, so that we can bridge the gap between ourselves and others. To this end, Cartesian dualist assertions that binary oppositions presuppose our reality were rejected in this study (see page 11), as I believe these binary pairs coexist in an equal symbiotic relationship, with each legitimising and endorsing the existence of the other. Finally, I considered that a deconstruction of so-called hierarchical 'male' claims to knowledge and a challenge to the superiority of positivism over all others was crucial to legitimising more feminine ways of knowing.

3.4. Feminist Epistemology

Harding (1991) identifies three categories of feminist epistemology that appear in the literature, the assumptions of which are based on her understanding of feminist epistemology as 'feminist ways of knowing' or 'feminist critiques of traditional ways of knowing' (Harding

1986:25-26). These epistemological categories include feminist empiricism, feminist standpoint and feminist post-modernity.

3.4.1. Feminist Empiricism:

Feminist empiricism is a critique of biomedical and other positivist inquiry that focuses on the exclusion of women from science. It appears to have originated from feminist researchers involved with life sciences who acknowledged and criticised the androcentric and social bias of positivism. Social biases are considered to corrupt the method of inquiry through the choice of problems studied, the design of the study and the interpretation of findings. An example of such biases is the exclusion of women from biomedical cardiac research. However, rather than rejecting this traditional approach, feminist empiricists suggest that scientific research if implemented correctly i.e. without 'sexism, androcentricity and social bias', then this 'bad' science would be more accurate and become 'good' science. The empiricists' solution to androcentricity is to include more women scientists and participants in the research process, thereby increasing the weight of their perspectives within the scientific establishment. Feminist empiricists work within the norms of positivist research; however, they 'proceed on the assumptions of inter-subjectivity and commonly created meanings and the realities between the researcher and the participant' (Olesen 1994:194). A recognition of the social bias of the research i.e. race, ethnicity, gender, class as relevant to the knowledge produced by the research process, under-cuts traditional assumptions of objectivity. Duran (1991) suggests that Harding's (1986) feminist empirical category attempts to;

> *'bring the feminist criticisms of scientific claims into the existing theories of scientific knowledge by arguing that sexist and androcentric results of research are simply the consequences of 'bad science''*
>
> (Harding 1986:81)

Feminist empiricism, in largely accepting the dominant epistemology of positivist inquiry, is more readily accepted in scientific establishments than other feminist epistemologies. However, although highlighting many of the shortcomings of scientific research, I believe that feminist empiricism itself appears quite conservative and almost contradictory to the very base of the empiricism that it seeks to uphold and reform. In order to conduct feminist research, research methods must surely be directed by feminist methodology, which in turn should evolve from feminist epistemology (Stanley & Wise 1993). Feminist empiricist attempts to improve 'bad science', represents a quick fix approach to research methods, and yet fails truly to examine or acknowledge the underlying methodologies and epistemologies of the scientific approach. Consequently, feminist empiricists attempt to make the world-view of male biomedical research 'fit' the world of women without acknowledging that women's

different health experiences and lives have been erroneously devalued and neglected as starting points of biomedical inquiry.

3.4.2. Feminist Standpoint Theory

Standpoint feminists believe that the problems associated with positivist inquiry go beyond mere 'bad science' or 'poor research methods.' Standpoint theory is derived from Marxist beliefs about the role of the proletariat and Hegel's (1967) insights into the master/slave relationship. In this relationship, a world-view prevails, where the master's rules, values and benefit are generalised to hold true for all people. The master views the world as an extension of himself and is ignorant or dismissive of other 'worlds'. In biomedical research, the master view is evident in medicine's historical use of the white middle-aged man as the normative frame (American Medical Association 1991). The generalising of male specific results to female populations exemplifies this prevailing ideology.

The slave in contrast, views the world with a wider 'lens' that includes a master and slave perspective. From the slave's position, a broader reality can be witnessed and unexamined assumptions can be questioned. Similarly, standpoint feminists suggest that women as an oppressed group/slaves have a different view of the world than their male oppressors/masters. This different reality or standpoint contrasts sharply to that constantly portrayed in positivist male-methods of inquiry and serves to provide a more 'complete' truth. Harding (1991) believes that the dominant and prevailing research methods of positivist inquiry fit the experiences of those who dominate the world i.e. western, white, middle-class heterosexual men. Standpoint theory suggests that those who dominate fail to see the systems of privilege that perpetuate their continued domination and that only from the standpoint of the oppressed i.e. people of colour, women, homosexuals and the poor, can systems of both privilege and oppression be recognised.

An obvious critique of feminist standpoint theory is its leaning towards unitary oppression, suggesting that all women are oppressed and as such identify with each other rather than any other oppressed societal group. It fails to acknowledge the hierarchy of oppression within oppressed groups, brought about by class, colour and sexual identity. It therefore upholds essentialist categories of womanhood, denies inequalities within gender and as such is at risk of creating other 'master' views of the world. However, the traditional creation of health knowledge from the dominant standpoint, considers the male body and illness experience as the 'norm' and all else as 'deviations from the norm' or 'other'. As women reside in all 'other' world-views, it is understandable why standpoint feminists have merged all women into one 'other' group. The challenge to standpoint feminists then is to disavow feminist chauvinism and to acknowledge that in order to understand the world that binds women together, it is essential firstly to understand and respect those worlds that separate them.

3.4.3. Feminist Postmodernism

Feminist postmodernism is a subtle and complex epistemology and, although warranting a deep and thorough analysis, can only be referred to briefly within the context of this discussion. Postmodernists celebrate the diversity of women's lives and believe that there is no single 'woman's' standpoint. While all women share the oppressive position within patriarchal societies, they also have diverse and fractured identities. Postmodernists reject all 'grand narratives' and express profound doubts about the universalising of claims regarding existence, nature, language, progress and science (Harding 1986). Instead, they suggest that the search for a universal or complete truth about the world is a futile exercise, dating back to Enlightenment beliefs, which entertained the possibility of a single truth. Rather than privileging the oppressive standpoint, Harding (1991) suggests that because so many diverse, contradictory and conflicting standpoints of discourse exist, none should be privileged to the cost of others. Postmodernists deny the existence of power neutral knowledge and as such reject any attempts to construct a standpoint theory, that may provide a fuller, richer and power-neutral view of the world. However, feminist post-modernism epistemology does not claim to have any 'lock on truth' (Duran 1991: 87) and as such is criticised for its vagueness (Harding 1986:28).

Stanley and Wise (1993) reject the notions of both empiricist and post-modern epistemologists suggesting that only through the constitution of feminist epistemology can feminist methodology emerge, research methods be conducted and feminism engage in a direct challenge to traditional inquiry. Whilst feminist empiricism would appear to lack radical initiative, feminist postmodernism fails to provide a practical framework on which feminist inquiry may develop. However, feminist postmodernism theory exposes the struggle at the core of feminist research most intensely. On one hand, feminist research empowers feminism as a tool for the critical examination/deconstruction of power and knowledge and as a political leverage with which women may advance their individual or collective cause. The challenge for feminist research is deciding which is more important – creating a body of research that is grounded in women's lives and experiences and which can act as a balance to the traditional method of inquiry, or as suggested by the postmodernists, to abandon the idea of one true feminist story and acknowledge the plurality of discourses.

In a challenge to the dominant biomedical world-view of cardiac health and illness, which has gendered this condition to a male phenomenon, I considered that the adoption of a feminist standpoint theory was crucial to underpinning a methodology with a valid alternative epistemology. The strength of feminist standpoint theory includes its response to biomedical positivist assumptions, that female cardiac health experience is an invalid basis for knowledge, by asserting that it possibly provides a more realistic and valid conception of truth, than that thrust upon the world by those who dominate it. Standpoint feminists believe that not all perspectives or sources of truth are discovered or even heard when employing male

dominated traditional research methods. Harding (1991) suggests that feminist research must begin with women's experience of their world, as their unique position in patriarchal society is a resource to understanding themselves and the world in which they reside. Feminist standpoint epistemology values the knower as an expert in her own life and as such does not privilege the 'knowing of the researcher' over that of the participant. The main strength of standpoint theory therefore, is its attempt to underpin methodology with a valid alternative epistemology with claims that the personal is political. However, in so doing I also accept and take on board the concerns of post-modern feminists, who caution against the essentialisation of women into a single homogenous female group. I therefore acknowledged that within this study, although sharing a common 'gender-bond' with each other, women are also a diverse group, amongst which systems of oppression may infiltrate.

3.5. Feminist Methodology

The feminist methodology that evolved from feminist standpoint epistemology provided the framework that allowed me to challenge the dominant world-view of women's cardiac health. Feminist methodology proposes that women have different ways of knowing and different cardiac health experiences to that which has been traditionally cultivated and valued in patriarchal societies. Historically, however, women's ways of knowing have been ignored or dismissed as irrelevant and denigrated by the dominant intellectual world-ethos. Due to its basis in feminist epistemology, feminist methodology proposes alternative theories of knowledge that legitimise women as knowers and attempts to present a wider and more realistic view of the world in which the dominant and oppressed reside. A commitment to epistemological assumptions, which places women at the centre of inquiry and values political action as a major outcome, constitutes what is considered a distinctly feminist research methodology.

3.5.1. Epistemological Commitments

Feminist methodology takes an explicit focus on the lived experience of women and the diversity of experiences within these lives. It recognises that women's lives are situated within the broader social, cultural, political and economical contexts of life and therefore strives to reveal the multiple social relations that serve to impact on the lives that women may lead. Given that research may be considered a social relation, feminist research is committed to an epistemological stance that acknowledges the possible imbalance of power between researcher and participant. Feminist methodology acknowledges that research carried out *for* women rather than *on* women, should where possible avoid hierarchical power relations within the participant-researcher relationship. Significant to feminist epistemological assumptions, are the concepts of 'reflexivity' and 'inter-subjectivity' (Shields & Dervin 1993), which attempt to situate the researcher and participant on the same critical plane. This explicit epistemological stance demands that the researcher acknowledges her/his social position in relation to age, socio-economic group, education, culture, gender and power and against

those social differentiations of those being investigated. Kasper (1994) adds that including participants at each stage of the research process acknowledges that those being studied are experts in their own lives and should be considered as partners in the research process rather than mere subjects or informants. Furthermore, feminist epistemological rejection of objectivity is evident in the notion that researcher subjectivities may play a role in study design, process and outcome and as such warrant investigation. In relation to research on women's cardiac experiences, feminist epistemological commitments would demand a power-sharing researcher-researched relationship and one that provides a vehicle for the female MI voice. These commitments would also require engagement in a continuous self-reflective process on the part of the researcher, so that the position of the 'researcher self' could be acknowledged and incorporated as an integral part of the entire research process. However, it is also acknowledged that the concept of power sharing is a difficult one to achieve, as the balance of power frequently sways in favour of the researcher.

3.5.2. Political Commitments

Additionally, feminist methodology exerts the emancipatory nature of feminist inquiry, enabling women and others to be active and/or change agents in their own right. Feminist theory is based on the underlying belief that most societies, including Irish society, are dominated by males to the detriment and oppression of women. It maintains that society has drawn from male knowledge, values, world-view and vision, to construct the prevailing and accepted theories of reality, history and truth. Subsequently, one of the main goals of feminist research is to act as a catalyst or tool that can direct change and improve the lives and health of women. Grounded in political imperatives of feminism, feminist research attempts to make visible women's experiences and correct their historical distortions. This attempt at ending women's unequal social positions emphasises the conviction of feminist research, that the personal is indeed political. To this end, certain responsibilities are imposed on the researcher. The acquisition of information should not herald the completion of the study rather the appropriate dissemination of findings should commence the next sequence of events i.e. political action. In relation to research on women with MI, political commitments would demand that I advance the cause of women's cardiac health through the strategic dissemination of research findings. Additionally, in line with political commitments, I would also have a responsibility to advocate actively on behalf of my participants, in political arenas that advance the collective cause of gender equality and end oppression (see appendix XIII).

3.5.3. Commitment to Gender

Whilst other research may embody similar epistemological and political commitments, the main distinguishing factor of feminist methodology is its focus on gender as an instrument for understanding the social order. The goal of such inquiry is to provide information to women about social phenomena that affect their lives, so that they can understand themselves and

their gendered world. The diverse identity of women offers rich sources of insight into these phenomena and it is from this fragmented identity that feminist research is generated. Feminist epistemological assumptions that legitimise women's life experiences as sources of knowledge acquisition, direct many feminist researchers to this resource. In the current study, part and parcel of this commitment to gender is to identify and acknowledge where women's cardiac health is located. If women's cardiac health is understood as something that is not solely determined by their bodies, but also embedded within the societies where they reside then Ruzek et al (1997) suggest that a new foundation for the development of a valid alternative epistemology will be laid. To this end, feminist research seeks to uncover the social relations and structural forces that shape women's diverse realities.

3.6. Methods for Feminist Research

Do feminist methods of data collection exist and if so how do these methods differ from others (Harding 1987)? This question has been the source of much debate within the feminist community, with writers such as Harding (1987) suggesting that 'it is familiar and uncontroversial methods that have been used to produce some of the most important of feminist analyses' (Harding 1987:7). Stanley and Wise (cited in Fonow & Cook 1991:90) argue that 'the methods themselves aren't innately anything'; whilst Smith & Heshusius (1986) maintain that the choice of research method should be based on the logic of justification, the researcher's epistemological origins, as well as the theoretical challenge of objectivism versus relativism.

> 'Quantitative data are often thought of as 'hard' and qualitative as 'real and deep' – thus if you prefer 'hard' data you are for quantification and if you prefer 'real', 'deep' data, you are for qualitative participant observation. What to do if you prefer data that are real, deep and hard is not immediately apparent'
>
> (Zelditch cited in Oakley 1993a: 209)

Qualitative and quantitative approaches to research are frequently viewed as frameworks that represent fundamentally different epistemological ideals, for conceptualising the nature of knowing and social reality (Filstead 1979, Corner 1991, Ford-Gilboe et al 1995). The debate usually follows that quantitative methods are inherently integrated to a logical-positivist paradigm, which emphasises the search for fact through objective, observable and quantifiable data. Many researchers examining timeframes to treatment for patients with symptoms of myocardial infarction, have employed a quantitative method in their attempt to obtain hard factual data concerning the phenomenon of interest (Birkhead 1992, O'Callaghan

et al 1995, McGee et al 1994, Cox et al 1997, Dracup & Moser 1997, Brophy et al 1998, Meischke et al 1998, Berger et al 2000, Leupker et al 2000). As with the treatment of basic matter in the 'hard' sciences, research participants are viewed as passive reactive organisms, whilst the researcher manipulates the external environment and monitors the effect on subjects (Stainback & Stainback 1984).

In contrast, the qualitative approach is intrinsically linked to a phenomenological paradigm and has enjoyed a rich tradition in sociology and anthropology. Porter (1989) suggests that the main goal of the qualitative method is to obtain a world-view of a specific phenomenon, studied from the frame of reference of the research participants. As previously mentioned (see section 2.3.5.) many researchers examining the health behaviour of MI patients who experienced delays to treatment, have employed a qualitative approach in an attempt to enrich their data set (Dempsey et al 1995, Johnson & King 1995, Foster & Mallick 1998, Meischke 1998, Meischke et al 1999, Rosenfeld & Gilkenson 2000). In contrast to quantitative methodologists, no effort is made by the researcher either to control the environment or to manipulate the events of individuals being studied. Instead, she/he strives to study the empirical world from the perspective of the subject and not that of the researcher.

The strive to make visible the lives and health experiences of women has seen a reliance by feminist researchers on qualitative methods of inquiry, in particular the in-depth interview (Oakley 1993(b), Kasper 1994, Morris 1995, Bola 1995, Bowes & Meehan 1996). Reinharz (1992) goes further in suggesting that because women's frame of reference has been characterised as relational and contextual, only in-depth interviews can capture these subjective experiences. Other qualitative methods employed by feminist researchers include oral life histories, ethnographic accounts and discourse analysis; however, none is distinctly feminist. These methods have emerged from phenomenological, grounded theory and ethnographic approaches to the social sciences and humanities and as such have attracted feminist researchers because of their sharp contrast with traditional androcentric methods of inquiry. Feminist researchers also assert that neither women's lives nor health needs can be fully understood through quantification and a reliance on androcentric traditional inquiry leads to distortion and exploitation of women's experience. Furthermore, the deep-rooted suspicion that quantitative methods reject women's experiences as legitimate knowledge has fuelled the advocacy of qualitative methods as a means of correcting this perceived injustice.

However, the weaknesses of qualitative methods must also be addressed, the most pronounced of which concern the question of rigour. Other criticisms of the method include the tendency to view the data as belonging to individuals, thus isolating the problem/illness to the person, rather than the wider social community. Olesen et al (1997) suggest that qualitative research is considered the lowest level of scientific research hierarchy, as a consequence of the apparent difficulties with rigour and the absence of generalisable results.

Hence, qualitative research constantly strives to justify its results and methods and to find alternative and persuasive definitions of what constitutes rigour (Hall & Stevens 1991). In contrast, quantitative methods have through their historical legitimacy in biomedical communities, obtained academic, public and political acceptability through recognised standards of rigour. Subsequently, positivist inquiry has informed public opinion, directed public health policy and effected political change.

As such, it would therefore seem fool-hardy for me or other researchers examining women's health, to reject totally the one 'language' that may advance the condition of women's lives. Oakley (1993) reminds us that different questions require different research methods and occasionally certain valued aspects of feminist research such as inter-subjectivity and empowerment need to give way to the dominant research models. The ability to understand and speak in the long-accepted rhetoric of scientific inquiry is sometimes necessary to effect change in women's lives. There is also a danger that in totally rejecting quantitative methods, women's experience may be continually associated with the lowest hierarchy of scientific inquiry. Amongst the dominant discourse which not only legitimises claims to knowledge but also effects political change, women's voices will always be considered 'illegitimate' or 'other'. Creating or sustaining yet another binary opposition i.e. qualitative/quantitative is alien to feminist epistemological assumptions and may in the long-run under-cut the very goals of feminist research. Rejection of one dominant world-view has been rejected by feminist epistemologists, but not to the point of substituting another dominant view in its place.

Stanley & Wise (1993) add:

> *'The idea that there is only 'one road' to the feminist revolution and only one type of 'truly feminist' research, is as limiting and as offensive as male-biased accounts of research that have gone before'*
>
> (Stanley & Wise 1993: 26)

Although paradigmatically different, both qualitative and quantitative methods would appear linear, insofar as they each possess an intrinsic and distinct beginning, middle and end-point. However, I considered that adhering rigidly to a linear approach in research, although adding to our body of knowledge would seem somewhat inappropriate and inadequate for the combined social and biological realities of women's cardiac health. I concluded that an examination of women's cardiac healthcare needs and the pursuit of optimal cardiac healthcare for women, would require methodological strategies, which rather than restricting the pursuit of knowledge, would optimise my efforts to uncover, describe and interpret the multifaceted complexities of women's cardiac health and illness behaviour. Feminist

standpoint epistemology in its acknowledgement of the existence of multiple realities and world-views, espouses a feminist methodology, which is best served in the employment of a multiplicity of methods.

3.6.1 Triangulating Numbers and Stories

> *Caught up as it is in these criss-crossing, mutually informative lines of inquiry and critique, the most valuable strategy for feminist research is, evidently, to abandon any quest for one true method, or for a universalism that would replicate the worst excesses of the older, hegemonic theories.*
>
> (Code 1995: 42)

Triangulation describes a research approach that combines research strategies to achieve a multidimensional view of the phenomenon of interest (Foster 1997) and as such holds true to epistemological assumptions of feminist standpoint theory. According to Mitchell (1986), the term 'triangulation' originated as a navigational strategy that enabled the location of an unknown position, by combining two or more reference points. Triangulation in research involves the combination of two or more investigators, research methods, data sources or theories in one study, which aims to investigate a single phenomenon (Denzin 1989, Polit & Hungler 1997). Two purposes of triangulation are described and these include the purpose of confirmation and the purpose of completeness.

- **Purpose of Confirmation**

Triangulation of research strategies overcomes the androcentric biases of single-method, single-observer and single theory studies and therefore increases the reliability and validity of results (Mitchell 1986, Breitmayer et al 1993, Foster 1997, Shih 1998). This use of different kinds of approaches to measure the same phenomenon of interest, whether originating from different data sources, investigators, theories, or methods, produces what Campbell & Fiske (1959:84) describe as 'a process of mutual confirmation.' Other researchers developing this theme of mutual confirmation through triangulation have included amongst others Denzin (1989), Knafl & Breitmayer (1989), Myers & Haase (1989) and Fontana (1996). Knafl & Breitmayer (1989) suggest that the use of triangulation for the purpose of confirmation has resulted in the identification of data collection instruments and techniques with previously identified strengths and weaknesses. These are then counterbalanced in the triangulation approach, which through the process of mutual confirmation, increases reliability and minimises threats to validity.

- **Purpose of Completeness**

Other researchers have identified completeness as an additional purpose of triangulation, served by the combination of methodological strategies. Foster (1997) suggests that combining methods may capture a more complete, holistic world-view of the phenomenon of interest. Fielding & Fielding (1986) also advocate the use of triangulation to enhance the depth and breadth of researcher understanding. They suggest that using triangulation purely as a means of convergent validity underestimates the benefits of this approach, especially for the qualitative researcher. According to their position, triangulation adds completeness to a study, through exposing the varied dimensions of the given nursing phenomenon. When employed for the purpose of completeness, the triangulation of methods appears to provide additional 'pieces of the puzzle' rather than multiple sources of data confirmation. Strategies are therefore chosen and combined, not because of their opposing strengths and weaknesses, but for their unique angle of inquiry in examining the research question.

- **Methodological Triangulation**

Denzin (1989) describes two types of methodological triangulation, which include within-method and across-method approaches. Within-method triangulation incorporates two or more similar data collection strategies to measure the same variable in one study. McKinley et al (2000) in a study comparing U.S. and Australian timeframes to MI treatment, employed the use of both patient records and questionnaire, to collect data. Schmidt & Borsch (1990) utilised a similar approach in a U.S. study on timeframes. It would seem evident that for both of these studies, triangulation was employed for the purpose of confirmation. Across-method triangulation describes the use of both quantitative and qualitative data collection tools in one study, to measure the same variable. Meischke et al (1995) employed both the use of patient records and telephone interviews to collect data on timeframe behaviour of MI patients. Similarly, Foster & Mallick (1998) in a U.K. study examining timeframe behaviour of MI patients, utilised both questionnaire and interview strategies to gather their data. The rationale for triangulation was not given in these papers; however, the use of across-method triangulation is likely to have been chosen for the purpose of completion.

- **Simultaneous or Sequential**

Finally, methodological triangulation may be simultaneous or sequential (Field & Morse 1985). Simultaneous triangulation describes an approach that incorporates two or more data collection strategies at the same time. These may be qualitative and quantitative strategies, or two or more strategies from within the same research tradition. Researchers employing this approach include Kenyon et al (1991) Meischke et al (1995), Foster & Mallick (1998). The study findings of one data collection strategy complement the other and each may confirm or refute the findings of the other. Sequential methodological triangulation uses one method before the other, the findings of the first method then direct or inform the second method. Fontana (1996) uses this approach to examine patients' perceptions of vigour in heart failure

and the role that planned exercise contributes to these perceptions. The use of sequential methodological triangulation, however, may be considered time consuming and costly and places great demands on the researcher in relation to resource allocation and research expertise (Shih 1998). Consequently, none of the reviewed studies to date have utilised this approach when examining care pathway timeframes for MI patients.

- **Sequential Across-Method Triangulation**

After much consideration, the most appropriate method of data collection for the current study was deemed to include a sequential across-method triangulation approach. This would incorporate an initial quantitative strategy of data collection, which would then inform the subsequent qualitative design and as such was considered to provide a unique multidimensional view of care pathway timeframes for MI patients. The choice of a multi-method approach was directed for the most part by the nature of the research question, but also by the lack of comparative studies in Ireland. As no other Irish based study had examined gender specific timeframes to treatment for MI patients, it was unclear whether a relationship between gender and timeframe even existed for Irish MI patients. Obtaining hard evidence, which accepted or rejected the existence of such a relationship, required that objective and quantifiable data were initially retrieved. The findings of the quantitative data collection method would then serve to inform the qualitative examination of any identified gender specific timeframes to treatment. A sequential across-method triangulation approach was therefore employed for the purpose of completeness and for its unique angle of inquiry.

3.7. Conclusion

In the realm of academia, feminists have convincingly argued that there is a masculine bias at the heart of most research disciplines, methodologies and theories (Oakley 2002), which has led to a systematic exclusion of women either as research participants or investigators. Within this androcentric approach the lives and cardiac health experiences of women tend to be de-valued or dismissed and what remains is a biased and distorted view of the world. Feminist researchers involved in health care research attempt to correct this distortion by critiquing existing research modalities as well as presenting an alternative feminist approach to inquiry. Within this alternative methodology, women's lives are placed to the forefront and women's experiences are legitimised as valid sources of knowledge.

The overview of feminist epistemologies demonstrates a progression from essentially reformist critiques to more radical approaches to knowledge acquisition. Despite the range of perspectives and critiques offered, I believe that feminist epistemology serves to challenge the models on which male-centred cardiac research methods are based. Feminist epistemology also challenges the 'knower' in positivist research and 'the means by which competing knowledge-claims are adjudicated and some rejected in favour of another/others' (Stanley & Wise 1993:188). Feminism, in its challenge to and critique of 'male-stream'

androcentric research, therefore aims to articulate the silenced voice of women's experiences of their worlds. However, as a tool for effecting personal and political change, an urge to dismiss positivism totally was rejected. With the acknowledgement of existing multiple realities, feminist standpoint epistemology actually espouses the employment of multiple methods of data collection, including those used by positivist inquiry. I considered the use of triangulation as the most appropriate and effective way of best serving the cardiac healthcare needs of women, whilst endorsing feminist assumptions of multiple realities. In employing triangulation, the first strand of the study would quantitatively answer research questions 1 and 2 (see page 41), whilst the second strand would qualitatively answer the final research question, the details of which would emerge from the findings of strand one.

Chapter 4

Strand 1 - Methods

4.1 Introduction

This chapter outlines the methods used for strand one of the study. The discussion opens with an outline of the decision-trail that I followed when selecting the most appropriate tool for the quantitative data collection. The suitability of retrospective methods was examined initially, followed by an examination of an alternative prospective method. It was finally considered that a census format, the 'Dublin Major Academic Teaching Hospitals (MATHS) 2001/2 MI Census' would be the most appropriate tool and would facilitate optimum comparative opportunities with previous Irish studies. In developing the Census form, I examined the strengths and weaknesses of the 1992 and 1994 MI censuses and sought advice from current literature and field experts. A pilot study was performed and issues of validity and reliability addressed. Also included in this chapter are the ethical issues that I considered important in safeguarding the well-being of study participants, data collectors and health institutions. Finally, the discussion ends with my experiences of the research reality, with excerpts taken from a reflective diary that I maintained during the course of the entire study.

4.2. Retrospective Data Collection Methods

The majority of reviewed studies that examine the timing of care pathway timeframes have done so in a retrospective manner. The nature of retrospection implies that data are collected on events/admissions that have already happened and these data have usually been recorded by people unknown to the researcher. These existing sources of data tend to be convenient to the researcher, substantially reduce data collection time and subsequently reduce research costs. An examination of these sources follows and their implications for use in the present study considered.

- **Population & Hospital Based Registers**

Probably the most convenient and comprehensive source of data collection for large samples/populations of MI patients is the use of population based cardiac registers. When population-based registers are employed, the researchers may potentially have access to an enormous amount of data for an entire population of patients. These data may then be stratified according to the requirements of the data collectors i.e. by time, age, gender, geography, socio-economic status, risk factor level, morbidity, mortality, treatment and so on. This data source has been used by many researchers including Morrison et al (1997) and Leslie et al (2000) both of whom examined care pathway timeframes for MI patients. The hospital based cardiac register is another convenient and comprehensive source of data retrieval, although it is limited slightly by its focus on the acute hospital sector. These registers can potentially provide data related to symptom severity, drug treatment, therapeutic and

intervention therapy, risk factor modification and cardiac rehabilitation. Many of the studies originating in the United States have utilised their existing national hospital-based cardiac register with much success (Rogers et al 1994, Maynard et al 1995, Gurwitz et al 1996, Brown et al 1997, Goldberg et al 1998, Hanratty et al 2000). Ireland unfortunately does not yet possess either a population based register or a hospital based cardiac register and therefore such sources of data retrieval were unavailable to the present study.

- **Discharge Statistics**

Another convenient source of data may be accessed through individual hospital discharge statistics. Some hospital registers/databases, (e.g. Hospital In-Patient Enquiry in Ireland, HIPE) provide data related to diagnosis on discharge, length of stay, demographical data, surgical procedures and mortality. However, although HIPE is the most comprehensive source of morbidity data in Ireland, it is not without its limitations. Hospital statistics generally do not reflect the pre-hospital setting, nor do they record time or course of pre-hospital events. Furthermore, HIPE does not follow the course and timing of individual care, nor does it record the type or timing of drug administration. Therefore, although extremely useful in monitoring and investigating the burden of illness in the acute hospital sector, I felt it was of little value to a study whose main aim was to examine pre-hospital and in-hospital care pathway timeframes.

- **Randomised Control Trials**

In the absence of population or hospital based registers or as an alternative source of retrieval, many researchers utilise datasets that already exist from large randomised control trials. These secondary sources provide the data collectors with a large amount of data from representative samples of the population. However, the researcher is restricted to data that may have been originally collected to measure the effect of a drug or intervention. An example of the type of limitation in usage is shown by researchers employing the GUSTO-I (1993) dataset (Cox et al 1997, Dracup et al 1997, Weaver et al 1997). This international clinical trial was designed to compare four different thrombolytic strategies for MI patients and included a randomised sample of approximately 41,021 participants. However, the researchers were limited by the inclusion criteria of this data-set insofar as only patients without contraindications to thrombolysis and those arriving to hospital within 6 hours of symptom onset were eligible to enter the trial. No data related to late arrivals were retrieved, so yet again, I considered that using such a dataset would be unsuitable for examining care pathway timeframes.

McGee et al (1994) utilised the database from ISIS II, a multi-centre study of thrombolytic therapy, when exploring factors that contributed to delays in treatment for 831 Irish patients entered into the trial between 1985-1987. The results of this analysis suggested that no

association existed between patient characteristics and timeframe to treatment. However, McGee et al (1994) were limited by this dataset, insofar as it excluded patients whose timeframe was >24hrs. Thus timeframes to treatment in this cohort, may have under-represented the true length of delay, as patients who were likely to experience the longest delays, were obviously excluded from this analysis. Furthermore, the results from O'Callaghan et al (1995) in the 1992 Cardiac Census, suggested that Dublin patients and in particular Dublin women, delayed longest to treatment, yet ISIS II trial only included patients from 1 Dublin hospital and 17 non-Dublin hospitals. As the present study aimed to examine all care pathway timeframes of MI patients in Dublin hospitals, I considered the employment of a dataset such as that available in ISIS II, to be of limited benefit.

- **Patients' Records**

Probably the most frequently employed method of retrospective data retrieval is the use of patients' case notes. Gan et al (1997) and Rathore et al (2000), both used this method in US studies examining evidence of bias in the treatment of MI patients, as did Wilkinson et al (1994) in a similar UK study. However, the use of patients' records in a retrospective way can be fraught with difficulties. Researchers rely on data that generally have not been recorded for research purposes and hence whose accuracy may be questionable. Furthermore, researchers cannot control who will record the data, or the amount or type of data that is available. Hence, although an easily accessible resource, researchers tend to meet many restrictions and threats to reliability with this type of data retrieval. I therefore considered it an unsuitable source of data retrieval for the present study.

4.2.1. Retrospection Rejection

Researchers employing a retrospective examination of timeframes to treatment, have a variety of secondary sources from which data may be retrieved. The most comprehensive sources of retrospective data would appear to be population based registers, with similar yet limited data available from hospital based registers. Unfortunately, Ireland possesses neither a population based register or a national cardiac register for hospitals and therefore this source of data retrieval was unavailable to the present study. Retrospective use of medical notes would appear to impose many data reliability problems, whilst validity issues are of concern in the datasets from large clinical trials due to the restrictions imposed on the researcher. These methods were therefore deemed unsuitable for the present study. Finally, the nature of retrospection suggests a lack of ability to plan, control or quality proof the recorded data from any of these sources. I felt that these potential sources of threat to validity and reliability were unacceptable and consequently the use of retrospective data collection methods in the present study was considered unfeasible.

4.3. Prospective Data Collection Methods

Prospective research methods are employed to examine events that are yet to happen. The researcher plans the type and amount of information to be recorded and controls who collects these data, whilst operating some quality proofing of same. Prospective data collection methods would appear to minimise or at least control for threats to validity and reliability and I therefore considered them suitable for examining care pathway timeframe for MI patients. An examination of prospective data collection methods follows, with implications for the present study.

- **Questionnaires & Patients Records**

The majority of prospective studies reviewed have collected data from patient questionnaire or patients notes on consecutive admissions to coronary care or A&E. One of the largest studies examining timeframes to treatment was the Rapid Early Action for Coronary Treatment trial (REACT) conducted by Leupker et al (2000). REACT prospectively entered 20,364 patients into a study, whose main aim was to evaluate a community intervention, to reduce patient timeframe from symptom onset to hospital. Data were obtained by standardised questioning of consecutively admitted patients, regarding the nature and time of onset of symptoms, as well as from the patients' case notes. Data protocols were reviewed and quality of data monitored throughout. The REACT dataset was subsequently utilised by Goff et al (1997) in a US study examining timeframe characteristics and by Luepker et al (2000) in a US study exploring ways of reducing timeframes to treatment. However, smaller studies have also utilised this approach. A UK study by Wilkinson et al (1994) employed this consecutive admission method, when examining bias in the treatment of MI patients. Hourigan et al (2000) also used this method when examining 'door to needle' times in Australia, as did Birkhead (1992) in a similar UK study.

- **Censuses**

Consecutive patients admitted to hospital during a particular time-period, provide a 'snapshot' of treatment times and timeframe behaviour, as well as insights regarding the impact of health policy at a given time. Such cohorts may also be considered a 'population' rather than a sample, as all known patients with chest pain and/or suspected MI are included during a given time frame. As a result, some studies employing this approach have considered their studies to be Censuses. Two of the largest Irish studies, which have recorded timeframes to MI treatment, have included the 1992 MI Census (O'Callaghan et al 1995) and the 1994 MI Census (McGee et al 1996). In the absence of population and/ or hospital based registers and in an attempt to minimise any threat to reliability and validity potentially imposed by retrospective data collection methods, the research groups chose to gather their data in a prospective manner and on consecutive admissions to coronary care.

4.3.1. A Consensus on Census

Prospective methods may be costly in terms of time, man-hours and expenditure; however, in contrast to the retrospective methods discussed above, many issues of reliability and validity may be identified, overcome or at least controlled for, prior to study commencement. I considered that in the absence of population and hospital based cardiac registers, prospective data collection methods would appear most suitable for the present study. This decision was also influenced by the degree of control that I felt I could impose on extraneous variables that might otherwise confound the data. The benefits of having the resource of two other Irish prospective studies on the management of MI patients, was also acknowledged, as providing both direction for the present study as well as a basis for performing future comparative analysis. The use of another 'Census' format was therefore considered to facilitate optimum comparative opportunities with the previous studies and so the quantitative data collection for the present study took the form of the Dublin Major Academic Teaching Hospitals (MATHS) 2001/2 MI Census. I considered that valuable insights for the new census might be obtained by performing an in-depth analysis of past Irish contributions.

4.4. Deconstructing the Past!

As previously mentioned (see page 38), the 1992 and 1994 MI Censuses provided snapshots of MI care and thrombolytic administration in Ireland, during a 1-week and 7-month period respectively. As no other comparative studies have since been published in Ireland, these Censuses provide a useful resource for comparative analysis and a baseline on which to build. In order to optimise the potential of the Dublin MATHS 2001/2 MI Census and improve on past comparable research efforts, a critique of these previous censuses follows.

4.4.1. The 1992 MI Census

In 1992, the Acute Coronary Care Council of Irish Heart Foundation (O'Callaghan et al 1995) carried out the first national Irish census of cardiac patients admitted to Irish Intensive/Coronary care units. This one-week prospective census involved the collection of data on consecutive cardiac patients requiring a 'cardiac monitor' in I/CCU. In total, 412 patients were admitted to 40 coronary care units and of these, 109 were MI patients. Table 1 provides a synopsis of the results yielded from the 1992 Census.

Table 1

The 1992 MI Census Results						
	MI Population Size	**Duration of study**	**Pain to I/CCU time (median)**	**Mortality**	**Most frequently used mode of transport**	**% of patients thrombolysed**
Results	109	1 week	4hrs	11%	Ambulance 44%	35%

O'Callaghan et al (1995) also included details related to risk factor and socio-economic assessment of patients and as such provided not only a much-needed comprehensive national database of cardiac admissions, but also provided direction and potential for future comparative studies. The strengths of the statistical analysis performed on the 1992 Census included the use of sub-groups analyses by gender and by Dublin area, yielding valuable information related to timeframes to treatment for these patient groups. However, other sub-group analyses that could have impacted on treatment timeframes were omitted and these include age, socio-economic group, mode of transport and referral source. It is acknowledged that the small sample size available to the researchers may have rendered these additional analyses unfeasible. The following is a critique of the statistical analysis of the 1992 Census data.

- **Population & Setting**

The 1992 study claimed to be a Census of Irish admissions that involved 40 coronary care units during a one-week period of time. In spite of this, the researchers failed to treat this Census cohort of patients as a population and instead treated them as a sample, suggesting that the word Census was either poorly understood by the researchers, or employed in the wrong context. Inferential statistics were carried out and findings generalised to the larger population of coronary care patients. However, as these were consecutive admissions to coronary care, the sample cannot be considered a random sample of coronary care patients and inferential statistics would seem inappropriate unless the researchers were convinced that this cohort was a true representation of the larger population of coronary care patients. However, a one week census of coronary care patients would seem to have inadequately represented the larger population of admissions to Irish coronary care during say, a year period. Neither the potential of seasonal variation nor the natural turnover of unit admissions had been accommodated for.

It is therefore doubtful whether this cohort of MI patients was a true representation of the larger population of MI patients. The research group should perhaps have chosen to consider their cohort of patients as a sub-population of admissions to coronary care, or chosen a longer period of time in which a sample more representative of the larger population may have been obtained. Alternatively, a simple random sample of patients admitted to the 40 coronary care units may have been employed and inferences to the larger population then readily carried out. Despite these limitations however, the 1992 Census certainly provided a snapshot of a week of admissions to Irish coronary care units.

- **Dublin Patients**

A median timeframe to CCU of 4 hours was recorded for the total population in the 1992 Census; however, a sub-group analysis for Dublin patients recorded a median time timeframe of 6 hours. The research group claim that Dublin patients took longer to reach CCU than their

non-Dublin counterparts and that the timeframe was of particular concern in Dublin women. However, no statement of statistical significance was made in relation to the timeframes for women, or discussion generated regarding its clinical significance. As timeframes to treatment for MI patients appear greater for the Dublin sub-population, the potential for future examination of care pathways in Dublin, using larger population sizes, would seem evident. O'Callaghan et al (1995), however, fail to recognise truly the clinical impact of greater treatment timeframes for Dublin patients, in particular Dublin women and as such failed to acknowledge the need for Dublin-specific studies.

- **Thrombolysis**

In 1992, approximately 33% of patients with myocardial infarction received thrombolysis, with Dublin males most likely to receive the treatment. In fact, 54% of Dublin males received thrombolysis in comparison to 20.7% of non-Dublin women, despite the fact that non-Dublin women had shorter pre-hospital timeframes. Although this observation was statistically non-significant, its clinical implications appeared extremely important and as such provided an obvious potential for further investigation into the treatment of women with MI. However, despite this result, as well as a greater mortality recorded in female patients, the research group failed either to acknowledge gender differences in treatment or to recommend further study to examine same.

- **Age**

Studies reporting a significant relationship between age and delay, both in pre-hospital (Weaver et al 1996, Dracup et al 1997, Brophy et al 1998, Meischke et al 1998, Bowker et al 2000, Barakat et al 2001) and in-hospital pathways to care (Hannaford et al 1994, Brophy et al 1998, Berger et al 2000) frequently suggest that older patients are more likely to have longer pre-hospital timeframes to treatment, more likely to have assessment and diagnostic delays, less likely to be admitted to coronary care and less likely to receive thrombolysis in comparison to younger patients. O'Callaghan et al (1995) suggest that in their cohort of patients, women were older than men; however, with the exception of risk factor level, no other published statistical result concerning the age group of participants in this census was reported. Failure to examine the effect of age further limited the impact of this variable within the 1992 census.

- **Socio-Economic Status & Education**

The socio-economic assessment carried out in the 1992 Census comments on employment status and highest academic achievement. As international studies suggest an existing link between socio-economic status and timeframes to MI treatment (Dracup et al 1997, Goff et al 1997, Mc Kinley et al 2000), the inclusion of these variables would seem appropriate. However, no sub-group analysis for gender appears to have been carried out on this data and

so the opportunity to observe relationships between these variables is lost. Furthermore, neither the clinical significance of occupation nor education was explored in the study, nor statistical analysis published on any of the categorical variables. Failure to discuss the implications of these results would shed some doubt on the usefulness of these items and hence the content validity of this Census.

- **In- Hospital Timeframes**

In-hospital timeframes to treatment are not apparent from the 1992 Census and it is therefore unclear where actual institutional delays were occurring. Although a median time from onset of symptoms to CCU is reported, 'door to needle' and 'door to CCU' times may have provided additional insights into potential areas of delay in triage, medical assessment and transfer timeframes. Furthermore, although the site of thrombolysis administration is ascertained from the Census, no timeframe from door-to-needle (A&E) is recorded. Six patients received thrombolysis at this site, yet no discussion regarding fast tracking of patients was developed.

- **Pre-hospital Timeframes**

In contrast to the above, much discussion was developed concerning timeframes to A&E in the 1992 Census, perhaps suggesting a bias towards this issue within the study aims. O'Callaghan et al (1995) perform a sub-group analysis by gender in relation to clinical presentation, pre-hospital timeframe and thrombolytic administration. Results suggest that approximately 60% of patients reached hospital within 6 hours of symptom onset, with 80% reaching hospital within 12 hours. However, O'Callaghan et al (1995) fail to examine the factors contributing to pre-hospital timeframe. Although reporting that 44% of patients arrived by ambulance, 40% by car and the remainder by other modes, no sub-group analysis by age, gender or socio-economic group is carried out. Unfortunately, O'Callaghan et al (1995) consistently missed opportunities to gather richer data related to pre-hospital timeframes and consequently limited the potential of this national Census.

4.4.2. The 1994 MI Census

In 1994, the second National Cardiac Census was carried out by McGee et al (1996), which aimed to extend the findings of the 1992 Census. However, in contrast to the 1992 Census, the focus was solely on MI patients and was completed over a 7-month period. In total, 950 patients were admitted to 40 coronary care units (the same centres as those involved in 1992); of these, 620 were confirmed MI patients. Table 2 provides a synopsis of comparative results in the 1992 and 1994 Censuses.

Table 2

A Comparison of the 1992 and 1994 MI Census Findings									
Study Results	MI Population Size	Time Span	Pre-hospital (median)	Pain to I/CCU (median)	Pain to needle (Median)	Door to needle (Median)	Most frequently used mode of transport	% of patients thrombolysed	Reason for non-thrombolysis
1992 Census	109	1 week	Not available	4hrs	Not available	Not available	Ambulance 44%	34.9%	Not available
1994 Census	620	7 mths	3hrs	3hrs 50mins	4hrs 9mins	1hr 15min	Ambulance 46%	58%	ECG unclear

It is obvious from the above table that the 1994 Census extended the findings of the 1992 Census in certain areas of concern. Timeframes to treatment were specified in more detail, with information yielded regarding pre-hospital timeframes, impact of referral source on timeframes, pain to needle times, door to needle times as well as citing reasons for non-administration of thrombolysis. However, as with the 1992 Census, the 1994 research group appeared to have encountered some similar difficulties in relation to sample representiveness and, in fact, at times failed to achieve the same level of analyses as the previous census. The following is a critique of the statistical analysis of the1994 Census data.

- **Population & Setting**

As with the 1992 Census, the 1994 study also claimed to be a Census of cardiac patients (McGee et al 1996); however, in contrast to the previous census, the 1994 study focused on MI admissions over a 7-month period. On first inspection, this study would appear to take into account some potential seasonal and unit variation. However, although the data collection lasted 7 months, each unit was only required to maintain records on 25 consecutive MI admissions. Therefore, larger units with a higher turnover of MI patients would have completed their data collection in a much shorter time-period than smaller units. In fact, two coronary care units were excluded from the study because their suspected MI admission rate was <25 per annum.

Therefore, the 1994 cohort of patients, although claiming to be a National Census of MI patients, cannot be viewed as a population. It was in reality, 25 consecutive admissions to 38 Irish coronary care units, throughout a 7-month time frame. Neither can this cohort be considered a random sample, as they were chosen in a consecutive and purposive fashion. Furthermore, the potential of seasonal variation had not been considered and consequently as with the 1992 Census, a potential for systematic bias existed in the selection process. However, as inferential statistics have been employed, one must assume that the researchers considered this group to be representative of the larger population of MI patients. Considering the above limitations and that no explanation has been given for the use of inferential

statistics in this dataset, the generalisability of these results to the larger population of MI patients is questionable.

- **Timeframes to Treatment**

In the 1994 Census, McGee et al (1996) report a median pre-hospital timeframe of 3hrs for MI patients, a 'door to needle' median time of 75 minutes, a 'CCU to needle' median timeframe of 25mins and a total median timeframe to CCU of 4 hours 9 minutes. In contrast to the 1992 Census, these data provide some insights into possible in-hospital treatment delays. Unfortunately, as with all other 1994 Census findings, no sub group analysis for age, gender, or socio-economic status had been performed. It would seem that little has been learnt from the 1992 Census, when McGee et al (1996) failed once again to acknowledge the potential impact of these variables on delays to treatment. Therefore, the available information regarding timeframes to treatment for Irish MI patients remains incomplete. Furthermore, the 1992 Census, demonstrated that Dublin patients were most likely to experience delays to treatment, yet unfortunately, McGee et al (1996) did not recognise the significance of these results and neglected to perform a sub-group analysis for Dublin patients on their dataset. Consequently, no further information regarding the timeframe to treatment for Dublin patients has been available since 1992.

- **Thrombolytic Administration**

The 1994 Census reported that 58% of patients received thrombolysis, whilst also recording some reasons why other patients failed to receive treatment. Although providing valuable insights explaining non-administration of treatment, McGee et al (1996) failed to follow-up the obvious sub-optimum treatment afforded to women in the 1992 Census. Although 32% of the admitted patients were female, no sub-group analysis by gender was carried out on thrombolytic administration, nor a discussion published related to gender issues. This omission of detail and analysis is quite alarming, considering the obvious incongruencies of the previously published results. McGee et al (1996) also report a median pre-hospital timeframe of 3hrs for MI patients. In total, 69% of admissions were referred by general practitioners and these admissions were associated with significantly greater pre-hospital timeframes. Although highlighting the association between GP referral and care pathway timeframe, no sub-group analysis for age or gender is performed and, yet again, the 1994 Census research group have missed the opportunity to enrich this dataset.

4.5. Development of the Dublin MATHS 2001/2 MI Census Form

The 1992 and 1994 Censuses have provided national snapshots of MI treatment during a 1-week and 7-month period respectively. The performance of some sub-group analyses by gender and 'Dublin patients' in the 1992 Census, has provided valuable yet incomplete information related to MI care for these patient groups and forms the basis for future comparative studies. The 1994 Census extended the findings of the 1992 study, by exploring

the reasons for non-thrombolytic administration and the factors contributing to treatment timeframes. The limitations of these studies include the small MI sample size in the 1992 Census and the potential selection bias of the sample in the 1994 Census. Although stating that each study is a 'Census', neither research group demonstrates 'population' confidence in their choice of statistical analysis. The performance of further sub-group analyses by age, gender, socio-economic group and geographical location, may have greatly enhanced the findings of these Censuses. The previous studies have therefore provided valuable insights into improvement potential for the present study and a basis for performing comparative analyses. The following describes the decision trail used in selecting the layout & design of the Dublin MATHS 2001/2 MI Census form, the rationale for item inclusion and the potential opportunities for comparative analysis with previous national and international studies. A pilot study was later performed (see section 4.7.) and issues of reliability and validity examined. An audit trail illustrating the various stages of census form development is available in appendix I.

4.5.1. Layout & Design

The pre-piloted Dublin MATHS 2001/2 MI Census consisted of 21 coded items on a single A4 pink card, which contained an 'anatomical heart' water mark. The 'anatomical heart' watermark was chosen for aesthetic reasons and to facilitate ease of association with an ongoing MI Census. Card was chosen rather than paper because of its perceived higher aesthetic quality as well as its superior durability. The A4 sheet was presented in 'portrait' page layout and sub-divided into three sections. These included Patients' Details, Admission Details and Treatment Details. Census forms were also allocated a hospital identification number (1-6) that appeared on the top right corner of the card (see appendix II).

- **Patient Details: Items 1-7**

Items 1-7 were mainly concerned with categorical data. The first of these included **(1)** the 'patient's hospital identification number', whose inclusion was considered essential for retrieving patients' medical notes for the initial Census form completion and also for subsequent quality proofing of data.

- **Age: Item 2**

As previously mentioned (see page 61), many comparative studies exploring timeframes to treatment for patients with myocardial infarction, have explored the relationship between age and care pathway timeframes. There are, however, contradictory findings about this relationship with some studies suggesting that none exists (McGee et al 1994, Horne et al. 2000), whilst others yield statistically significant evidence supporting the relationship between the two variables, both in pre-hospital (Weaver et al 1996, Dracup et al 1997, Brophy et al 1998, Meischke et al 1998, Barakat et al 2000, Bowker et al 2000) and in in-hospital pathways to care (Hannaford et al 1994, Berger et al 2000). Further in-depth analysis of age in the 1992 and 1994 Census may have provided some valuable insights regarding the

influence of age on behaviour prior to hospitalisation, route taken to hospital, receipt of thrombolysis and mortality. However, as age has been associated with increased timeframe times to treatment, especially in women, the importance of this variable secured its place on the Dublin MATHS 2001/2 MI Census.

- **Gender: Item 3**

The impact of gender on treatment timeframes has been discussed previously (see section 2.3.5), with many international studies reporting statistically significant findings that women are most likely to experience both pre-hospital and in-hospital care pathway delays (Clarke et al 1994, Magid et al 1997, Brophy et al 1998, Foster & Mallick 1998, Meischke et al 1998, Canto et al 2000, Sheifer et al 2000). Although some sub-group analysis by gender was performed on the 1992 dataset, a potential for greater sub-group analysis still existed in the areas of both pre-hospital and within hospital timeframes to treatment. Gender was included on the Dublin MATHS 2001/2 MI Census to optimise this potential. In keeping with feminist commitments to gender, the word 'female', 'woman', or 'women' was placed before the word 'male', 'man' or 'men' on any written documentation, including the Census form. In placing women first, the traditional ordering of the sexes i.e. men & women, males and females was interrupted and challenged.

- **Socio-economic Status: Items 4 & 5**

Although the 1992 and 1994 Censuses included items related to education and socio-economic status, neither census examined the impact of these variables on treatment timeframes. However, it was also considered that ascertaining the socio-economic status of women may be difficult and as happens frequently with this measurement, may be complicated by the assignation of class status based on the occupation of the male head of household. The nature of this type of measurement belies the fact that not all household resources are shared equitably (Moss 2002, Tisdell 2002). Krieger et al (1993) also suggest that calculating women's socio-economic status based on the traditional elements of income, education and occupational prestige is difficult as women's educational level does not always lead to well-paying jobs, nor is women's work necessarily afforded occupational prestige. However, as international studies suggest an existing link between socio-economic status and timeframes to treatment (Dracup & Moser 1997, Goff et al 1997, Mc Kinley et al 2000), it was considered that the inclusion of items **(4)** 'occupation' and **(5)** 'insurance status', may provide some insights into the socio-economic groups of patients in the present study. 'Occupation' would refer to the occupation of the patient and whilst acknowledging the potential problems associated with this term, it was hoped it might provide even a tenuous link with socio-economic status. 'Insurance status' was considered a more objective measure of wealth and privilege. These items tentatively secured a position in the Dublin MATHS 2001/2 MI Census, with their reliability ascertained during pilot study.

- **Pre-hospital Timeframes: Items 6 & 7**

As well as suggesting a relationship between female gender and treatment timeframes, many comparative international studies have reported statistically significant evidence, that this timeframe may also be associated with GP contact (Birkhead 1992, Leizorovicz et al 1997, Horne et al 2000, Leslie et al 2000) and failure to arrive by ambulance (Meischke et al 1998). Although McGee et al (1996) reported similar findings in the 1994 Census they failed to carry out sub-group analyses for gender and other categorical variables. Items **(6)** 'referral source' and **(7)** 'admission route' were therefore included in the Dublin MATHS 2001/2 MI Census so that full analyses could be realised.

- **Admission Details: Items 8-13**

Items 8-13 were of a continuous nature and concerned with pre-hospital timeframes and potential assessment or/and in-hospital timeframes to treatment. Items **(8)** and **(9)** would yield data related to time of symptom onset and most intense symptoms, respectively. Inclusion of both of these items was considered important in clarifying pre-hospital symptomatology. Data retrieved from item **(10)**, 'arrival to hospital' would allow for 'pain to door' computations between these three items, thus facilitating comparative analysis with previous national and international findings. Items **(11)** and **(12)** would yield data related to the time of triage and medical assessment respectively and would provide data related to A&E treatment timeframes. Data from item **(13)** 'admitted to CCU' would allow for a variety of possible computations with all preceding items (see appendix II).

- **Treatment Details: Items 14-21**

Items 14-21 were included to yield a combination of continuous and categorical data. Item **(14)** ascertained whether a working diagnosis was established, as only patients with this provisional diagnosis would be included in the Census. Item **(21)** yielded data concerned with the confirmation of the myocardial infarction diagnosis. Items **(15-18)** were concerned with the administration of thrombolysis, the site and time of administration and the reasons for non-administration. Ascertaining the time of thrombolysis allowed computations of 'door to needle' times, thus facilitating comparative analysis with national and international standards. Items **(19)** and **(20)** were concerned with the performance and timing of primary PTCA. This procedure was not widely available during the 1992 and 1994 studies; however, during the Dublin MATHS 2001/2 MI Census, this procedure was carried out in some centres as a possible alternative to thrombolytic administration. Although not all Dublin MATHS hospitals were equipped to carry out this procedure, all had access to this resource. The inclusion of this item was therefore considered appropriate and timely.

4.5.2. Population & Setting

In contrast to the two previous studies and in an attempt to allow for both seasonal and unit variation, data collection for the Dublin MATHS 2001/2 MI Census would be continuous in each unit for the calendar year December 1st 2001 to November 30th 2002. However, a National Census on the scale of either of the previous studies was considered beyond the scope of one researcher, thus the Dublin MATHS 2001/2 MI Census only involved consecutive admissions of suspected MI patients, to the six Major Academic Teaching Hospitals in Dublin. This cohort of patients could then at best be considered a 'population' and at least, a representative sample of suspected MI patients admitted to Dublin CCUs. As the 1992 Census findings suggested that timeframes to treatment for MI patients admitted to Dublin hospitals, exceeded timeframes for their non-Dublin counterparts by 2 hours, an examination of these timeframes a decade later also seemed timely. Furthermore, as the 1992 Census suggested that timeframes to treatment were longest in Dublin women, an examination of gender specific timeframes for the Dublin cohort also appeared appropriate. It was therefore considered that an MI census of Dublin patients, not only seem justified, but also facilitated the development of a unique database that could be employed as an evidence base for future comparative studies.

4.5.3. Data Collection Point

To facilitate comparative analysis with the two previous Censuses, the Dublin MATHS 2001/2 MI Census also used the Coronary Care Unit as the data collection point. Similarly, the proportion of MI patients who died in A&E, or who were sent to medical wards were not included in the Census data and it is acknowledged that the exclusion of these patients was a limiting factor in this study. However, it was considered that the expansion of the study design to include A&E and medical wards would again be beyond the control and resources of one researcher.

4.5.4. Inclusion Criteria

No 'inclusion criteria' were reported in either of the two previous Censuses. It is therefore unclear whether re-admissions, or inter-hospital transfers to CCU were included in these cohorts, both of which may have served to over-estimate the total number of patients involved. Moreover, timeframes to treatment for intra-hospital transfers may have been significantly less, than for patients admitted from the community. In the final analysis of timeframes, intra-hospital transfers may have served to under-estimate over-all treatment timeframes. In contrast, only data related to all suspected MI patients admitted to the Dublin MATHS Coronary Care Units via Accident and Emergency departments were included in the Dublin MATHS 2001/2 MI Census. In order truly to inform and gain consent from this cohort, I felt that the ability to understand English or have a translator to facilitate understanding would be an important additional inclusion criterion for each patient.

4.5.5. Exclusion Criteria

No 'exclusion criteria' were documented in either of the two previous Censuses; however, the Dublin MATHS 2001/2 MI Census would exclude data from suspected MI patients who were not admitted to Coronary Care via the Accident and Emergency department. This would exclude both intra-hospital and inter-hospital transfers to Coronary Care. Furthermore, patients who as a result of critical illness, cognitive impairment, impaired vision or hearing would not comprehend the study details and who may have had no next of kin to provide consent, would not be included in the Census. Non-English speaking patients without translator assistance would also be excluded from the Dublin MATHS 2001/2 MI Census.

4.5.6. Data Collectors

The 1992 and 1994 Censuses, both successfully employed the use of coronary care nurses as data collectors. Similarly, the data collectors for the Dublin MATHS 2001/2 MI Census were also nurses and included approximately 130 staff employed in the six Dublin MATHS Coronary Care units. I also visited the units twice weekly to support staff, to assist with data form completion and to quality-proof completed forms for accuracy. The involvement of this number of predominantly female data collectors was in keeping with the power sharing principles of feminist research, as it was hoped that their huge contribution in such a large nursing study would instil a sense of ownership amongst the various staff members.

4.5.7. Patient Consent

As the study involved the inclusion of critically ill patients, I felt it was extremely important that time was given for patients to recover, at least physiologically, prior to the commencement of consent procedures. For this reason, although patient data were collected on admission to the CCU, consent to use these data was obtained retrospectively. Patients would be approached for consent reasons on day 2-4 of their hospital stay, or when deemed by the charge nurse to be physiologically stable. The completed Census forms would be shown to each patient and permission obtained to use the data. If consent was not granted, then I immediately discarded the completed data form and recorded data. Consent is further discussed in section 4.6.

4.5.8. Negotiation of Access

Permission to carry out the Dublin MATHS 2001/2 MI Census was sought from the Director of Nursing, Consultant Cardiologists, Coronary Care Unit Managers and Ethics Committee of each of the participating hospitals (see appendix IV). This negotiation of access contrasts with the 1992 research group who sent each admitting consultant and unit sister written details of the 1992 Census, seeking permission to carry out the census in the associated hospital. The correspondence was not sent to the Director of Nursing or the Ethics Committee. The 1994 research group did not document details related to their negotiation of access. In the current study, I considered that widening the negotiation to include all pertinent groups in the negotiation of access was an important and equitable decision. The inclusion of the Ethics

Committee was conducive to protecting the well-being of all involved, in particular the safety and rights of the patient as well as those of the staff and institution. As primary caregivers to MI patients and data collectors for a full year, it was obvious that the Census would have the greatest impact on nurses' roles. It was therefore essential that the Director of Nursing was involved in the decision-making process and that nursing staff members were empowered to say 'no' to the study if considered disruptive to patient recovery or their general work-load. Each unit manager was encouraged to discuss the study and its potential impact with their staff, before granting permission to proceed (see appendix IV).

4.6. Ethical Issues

The nature of the Dublin MATHS 2001/2 MI Census demanded that data related to participant admission and MI treatment be extracted from participants' medical notes. From this method of data collection and associated research outcomes, it was considered that many actual and potential issues of ethical significance were likely to emerge. Of particular concern were issues related to the protection of the rights of individual participants and those related to the wider political context of the study, specifically the dissemination of findings. To provide a basis for ethical decision-making throughout the study, an ethical framework was required. The principle-based ethical framework was adopted for this purpose, as I considered that the universally recognised principles of beneficence and respect for autonomy were key components in any ethical decisions related to the protection of rights. Although justice can also be relevant to this issue, it was considered to have a greater application to the political context of the study. Beneficence is described by Gillon (1992), as doing good for others, while Beauchamp and Childress (1994) add that it requires the provision of benefit and the balancing of benefit and harm. Within this particular framework, it incorporates non-maleficence (the principle of doing no harm). Respect underpins the acknowledgement of the decision-making abilities of the autonomous individual, whilst justice is considered a group of norms for distributing benefits and risks fairly (Cerinus 2001).

4.6.1. Respect for Autonomy

In the arena of health care ethics, autonomy may be interpreted as the right to give or refuse consent to whatever we do, or is done to us by others (Downie & Calman 1994). Informed consent is defined as the responsibility and legal requirement of the researcher to disclose information to each participant enabling her/him to evaluate the procedure before consenting (Pape 1997). Kendrick (1994) states

> 'There is a close relationship between autonomy and informed consent: the former being concerned with freedom and choice, the latter being the key which unlocks and enables their expression.'
>
> (Kendrick 1994: 740)

As data were being extracted from participants' notes for use in the Dublin MATHS 2001/2 MI Census, all participating institutions had a responsibility of justice to each participant, to ensure that personal and confidential information held by the institution, was not disclosed without her/his consent. In Ireland, a participant's right to confidentiality is governed by state law, in the form of the Data Protection Act 1998. As well as seeking ethical approval from each of the participating hospitals, no participant's data were used for the purposes of the Dublin MATHS 2001/2 MI Census, without the consent of the individual. Participants were also assured that any information provided by them would remain confidential and that neither their names nor other identifying details would appear in any thesis, report or publication yielded from the study findings.

In the context of the present study, participants neither had a duty to participate in the Dublin MATHS 2001/2 MI Census, nor to permit the disclosure of their health information for this purpose. However, the information recorded on the Census forms would be retrieved from the patient's medical notes and confirmed where possible by the patient's verbal reports. The relevance of ensuring voluntariness among the census participants was essential, since they were not required in law to partake in the study and were as such guarded by increasing degrees of legal protection if choosing to participate (Kennedy & Grub 1994). I therefore informed participants both verbally and in writing about the voluntary nature of their contribution to the study and in addition informed them of their rights to withdraw their details from the study at any time (see appendix V).

4.6.2. Doing No Harm

Practical difficulties related to putting the principles into practice in researcher/researched relationships frequently surround the issue of power. Although withholding consent would have no bearing on existing or future care, it was acknowledged that the participant may have felt obliged to give consent to nurses who had cared for her/him during a critical illness and because of a desire to please the staff. Therefore, any presence of coercion or undue influence was considered to threaten the concept of true participant autonomy when obtaining informed consent. In the context of justice and autonomy, it was considered more appropriate if I safeguarded these principles by carrying out the consent procedure myself. It was also considered that staff members were more likely to advocate against the participant being disturbed by a researcher seeking consent, than by one of their own colleagues completing her/his duties. It was therefore considered that the principle of non-maleficience would best be served if the coronary nurse was not involved in the consent procedure, but remained the objective participant advocate. In the event of a participant being without the capacity to give or refuse consent, obtaining proxy-consent from a next-of-kin was deemed appropriate.

However, as many of the participants were by the nature of the study, recovering from critical illness, the ability of the individual to make an autonomous decision was at times in doubt. In

the interest of safeguarding the principles of autonomy, justice and respect, the participants were only approached to give consent when deemed by the nurse in charge to be physiologically stable. Both verbal and written details of the study were provided for each participant and time was given for information assimilation. I then answered any additional questions and/or concerns that participants may have had and only when satisfied with the information received, were participants asked to sign a consent form (see appendix V).

4.6.3. Doing Good

When beneficence is considered in relation to the protection of rights, there is acknowledgement of the need to balance the autonomy of the participant with the desire to do the best for the participant, from the perspective of the researcher. However, what constituted beneficence from the point of view of the researcher in the present study was not straightforward. Although desiring to do the best for the wider population of MI participants, it was possible that the participants in the study may not directly reap a benefit. However, whenever possible the individual participant was given the opportunity to contribute personally to the study data. Where possible, I asked patients to confirm the entries on their Census forms and in so doing were provided with the opportunity to recount aspects of their illness experiences. I hoped that this quality proofing by the participant would be an empowering experience for her/him and would subsequently 'do good.'

4.6.4. Political Context of Research

Merrell & Williams (1995) suggests that the wider political context within which research is conducted, influences the motives and purposes that compel researchers to make certain decisions. Specifically and of greater significance, is the political influence exerted over the control of dissemination of findings. Although many researchers can have absolute control over the factors that influence research outcomes, there are circumstances where researcher control over dissemination is tenuous. The principle of justice significantly influences any ethical decisions in relation to the disclosure or non-disclosure of data. Amongst related discussions within the literature, Rawls' (1971) theory of justice is frequently quoted, as it strives to reconcile a number of diverse theories. Rawls (1971) suggests that everyone should have the same amount of freedom as that awarded to the next person. He adds that deliberate inequalities are unjust, unless they can benefit the least well off in society. In relation to care pathway delays for participants with myocardial infarction, Rawls' (1971) theory would suggest that each person should have equal access to the same treatment for MI and that any deliberate inequalities associated with this care are unjust. The nature of the Dublin MATHS 2001/2 MI Census suggested that my findings might potentially have revealed inequalities in the treatment of MI participants, which do not benefit the least well off in society.

However, although a duty of confidentiality existed between my participants and me, a duty of confidentiality also existed between each of the participating hospitals and me. I felt that highlighting the shortcomings of any institution without first providing the opportunity to effect change would be potentially harmful and in breach of the duty of confidentiality I afforded to each of the hospitals. I considered it just, that any publicised report of the findings, only include an aggregate account of all six hospitals participating in the study, unless permission was granted by the individual hospitals to do otherwise. In addition, each individual hospital would receive a report indicating the findings of their institution's data, therefore enabling the institution to effect change in any area of concern (see appendix VI). A pilot study was then conducted to examine amongst other things, the robustness of this principle-based ethical framework in safeguarding the well-being of those involved.

4.7. Pilot Study Opportunities

Prior to conducting the main research study, two pilot studies were carried out. The nature of pilot studies suggests that a smaller version of the main study be tested so that the desired methodology is refined and deemed feasible. The first pilot study involved one hospital only and focused on reliability and validity concerns related to the actual Census form itself, as well as issues related to the safeguarding of ethical principles. The second pilot study was carried out three months after the initial pilot study and aimed to identify and correct any difficulties in the data collection procedure particular to each hospital. In essence the second pilot study was a dry run for the main study, which commenced immediately afterwards (December 1st 2001). By simulating the design and main study methodology, the two pilot studies facilitated the development of a finely tuned data collection tool and a fully informed and well-supported team of nursing data collectors. The following discussion summarises the opportunities provided to me by the two pilot studies that both enhanced the credibility of the study findings and allowed me to experience a simulated study.

4.7.1. Credibility of Study Findings

Avis (1995) suggests that the success of nursing research is dictated by the methods that the researcher uses to convince her/his peers that the study findings are credible. Reliability and validity are central concepts that traditional researchers employ to satisfy the rest of the research milieu, that outcomes are authentic and plausible. Reliability can be described as 'the consistency or constancy of a measurement instrument' (Lo-Biondo-Wood & Haber 1994:558) or 'the degree of consistency or dependability with which an instrument measures the attribute it is designed to measure' (Polit & Hungler 1997:651). Validity is 'the determination of whether a measurement instrument actually measures what it is purported to measure' (Lo-Biondo Wood & Haber, 1994:561). Described in these ways, the under-pinning

positivist assertion of a singular reality is evident. However, for the purposes of the quantitative strand, which demanded an objective answer to a difficult question (see section 3.2.), these definitions served to create the desired effect. The following discussion describes the measures taken to ensure that the Dublin MATHS 2001/2 MI Census would yield reliable and valid data.

4.7.1.1. Reliability

Reliability in the traditional sense focuses on standardising data collection instruments (Mason 1996:24) and is premised on 'the assumption that methods of data generation can be conceptualised as tools and can be standardised neutral and non-biased' (Mason 1996:145). Although these definitions are recognised as consistent with positivist thought, the concepts of neutrality and non-bias are rejected in this discussion. Although I agree that standardising a tool may reduce bias and enhance neutrality, I do not believe that these concepts can be eliminated completely. As the originator of my research instrument, I was acutely aware that I may have brought to the research process my own biases and agendas. As data collectors, people make mistakes and make judgements based on entrenched value systems and moral imperatives. As statisticians and interpreters of findings, people assign meaning to what they consider are legitimate sources of knowledge and may discard values that they perceive as non-valid or illegitimate. With these potential flaws in mind, a search for an objective answer to my first research question still remained (see section 3.2.) and to this end, where *humanly* possible, I made every effort to ensure that yielded data were reliable.

Inherent in any data collection tool is a degree of potential measurement error. Burns & Grove (1999), suggest that measurement error is the degree with which the recorded measurement deviates from the true measurement value. This error may be direct or indirect measurement error and can be either random or systematic. Direct measurement error occurs when an observed measurement e.g. timeframe is recorded incorrectly – this could be due to the failure of the data collection tool (e.g. Dublin MATHS 2001/2 MI Census), or failure of the data collector to document the measurement accurately. Indirect error occurs when a measurement is not observed but estimated. Random error suggests that the error is unpredictable, insofar as it is without pattern or direction. Therefore, in one measurement, the error can be lower than the true value and higher than the true value in the next measurement. In contrast, systematic error suggests that the error is predictable and directional. The error is either consistently recorded above or below the true value.

- **Random Error: Measuring the human factor?**

The issue of reliability was a difficult one, as the Dublin MATHS 2001/2 MI Census form was developed to collect information regarding the timing of events in the pre-hospital and in-hospital pathways of care. However, would it really measure what it was supposed to measure if the accuracy of recorded times could not be guaranteed? Hundreds of patients,

A&E & CCU clinicians, as well as hundreds of sets of handwritten medical notes were involved to some degree with the data collection procedure. Individual clinicians were likely to vary in their documentation of treatment times, whilst patient recall may have been affected by elapsed time to consent procedure. Handwriting skills may have ranged from the indecipherable to the eloquent hand. Although the Census form aimed to measure the timeframes to treatment, this was considered an inaccurate science from the outset, due to the presence of the 'human factor'. Unless each patient's pathway of care was observed and timed with 'stop-watch' precision, the accuracy of recorded times could not be guaranteed. It was considered, however, that with the preparation of data collectors prior to study commencement, the quality proofing of all forms by myself and the clarification of details by the patient (where possible), the 'human factor' effect would be minimised. In order to measure the amount of random error present in the Census form, reliability tests were performed during the first pilot study. Reliability testing measures the amount of random error present in the measurement strategy (Burns & Grove 1999) and is usually expressed as a correlation co-efficient. A data collection tool that is perfectly reliable results in a correlation co-efficient of 1.00, whereas a correlation coefficient of 0.00 suggests that no reliability exists. Reliability testing for the Dublin MATHS 2001/2 MI Census focused on two aspects of reliability. These included stability and equivalence.

- **Stability**

Stability refers to the repeatability of the measurement tool and is ascertained by performing test re-test reliability. In this technique, the Dublin MATHS 2001/2 MI Census (pilot one) was completed by the same data collectors at different times. During the first week of data collection, four patients were included in the census and the censuses were completed by four different nurses. Prior to discharge (approximately 1 week later), the medical notes of these patients were retrieved and the same nurses completed the census forms once again. The results produced a lowest recorded correlation coefficient of r =.88 and a highest of r =1.0. Burns & Grove (1999) suggest that an acceptable correlation coefficient for a newly developed measurement tool should be ≥.70, which is indicative of a moderate/ high correlation between test and re-test results and is suggestive of a moderate/high degree of reliability.

- **Equivalence**

Equivalence is concerned with comparing measurements recorded by two or more data collectors, who measure the same event. This technique is termed inter-rater reliability and in the context of this study compared the census forms completed by four different data collectors who observed the same patient's set of medical notes. Three of the test results produced a correlation coefficient of ≥. 80, which according to Burns & Grove (1999) is suggestive of a high degree of reliability. However one test produced a correlation coefficient of r = .725 which was indicative of a moderate correlation only between the two recordings

and was suggestive of a moderate degree of equivalence. Burns & Grove (1999) suggest that a correlation coefficient of less than .80 warrants concern regarding the reliability of the tool.

On closer inspection of the raw data, it appeared that one item (Question 18) in the Census differed when recorded in the two completed forms (see appendix II). The first data collector (who also admitted the patient) recorded 'ECG ambiguous' as the reason for not administering thrombolysis. The second data collector recorded 'unknown' as the reason. From examination of the medical notes, it would appear that 'ECG ambiguous' was the true reason for not thrombolysing the patient. Another error occurred on the recording of primary PTCA. The first data collector omitted this timeframe because the patient did not receive a PTCA on admission, whilst the second data collector recorded an elective procedure timeframe that was performed two days before the patient's discharge. This correlation coefficient of .725, for inter-rater reliability suggests that a potential for random error existed, particularly in the transcribing of data from medical notes to the Census form. Staff who were familiar with the patient's admission history were perhaps more aware of clinical decisions made on behalf of the patient. Other staff who were unfamiliar with the admission history needed to 'hunt' through the medical notes for relevant data. Time constraints, human error, misunderstanding and illegible handwriting were considered potential contributors to inaccurate data recording. In an attempt to minimise the amount of random error, which may have potentially occurred during the transcribing of data, the following strategies were put in place.

- Each unit received information sessions prior to the commencement of the main study. The possibility of random error occurring was discussed at these sessions and it was suggested that where possible, the admitting nurse completed the Census form.

- It was also suggested that the Census form be completed as soon as possible on admission of the patient to the unit. Earlier Census form completion would potentially involve less medical notes to scan and would reduce the likelihood of 'buried' information. The differences between primary and elective PTCA was explained.

- I also arranged to visit each unit twice weekly and scan medical and nursing notes to confirm the accuracy of completed forms.

- During consenting of patients, each patient would have the opportunity to clarify the accuracy of recorded data. This clarification was particularly relevant for categorical data recorded (items 2-7) as well as the timing of symptom onset (item 8) (see appendix II).

- **Systematic Error**

A potential for systematic error was also identified during the first pilot study. On two occasions, staff duplicated Census forms, which would have subsequently augmented both the numbers of patients admitted to the unit and the data collected. Fortunately, due to the small number of patients involved in the pilot study and the patient consent procedure, I quickly identified this error. In order to prevent further duplication of both forms and the data collection effort of staff, the following procedures were put in place for the main study.

- I maintained a written record of all patients entered into the Census.

- Each unit involved in the study had a box file where completed forms were stored. On the inside lid of each box file, staff completed their own Census record of patients entered into the study (see appendix VII). Thus, duplication of Census forms was prevented.

A further potential for systematic error was also identified. On examination of the medical notes, it was evident that the patient's 'front sheet' provided an 'admission time' which was different and, on many occasions, later than the true admission time of the patient. A delay in processing computerised documentation during busy periods may have contributed to this discrepancy in admission times. Although systematic error did not actually occur during pilot study data collection, it remained a potential source of such error in the main study. In order to reduce this effect the following procedure was put in place:

- During the information sessions delivered to each Coronary Care the possibility of such systematic error occurring was discussed. It was suggested that if the front sheet was utilised for estimating 'arrival to hospital' (item 10), then this data needed to be confirmed by at least one other source i.e. medical notes or patient's verbal clarification. If clarification was not available, then item 10 would be left blank.

- As with other potential sources of error, I would visit each unit twice weekly and scan medical and nursing notes to confirm the accuracy of completed forms.

4.7.1.2. Validity

Any discussion regarding the concept of validity within nursing research has been largely influenced by the epistemological and paradigmatic distinctions between quantitative and qualitative methods. The definition of validity as it appears in the Oxford English Dictionary (1971) states that validity is 'the quality of being well founded on fact, or established sound principles and thoroughly applicable to the circumstances: soundness and strength (of

argument, proof, authority etc).' The positivist epistemological origins of this concept are immediately evident again, as it suggests that any claims to knowledge are justified and that hard facts are employed to support such claims. The various definitions of validity within nursing research literature reflect the dichotomous positions of the authors and the accompanying epistemological and paradigmatic biases. Early definitions occurring in the nursing literature suggests an emphasises on a positivist approach with Treece and Treece (1977) suggesting that validity refers to an instrument or test actually testing what it is supposed to test. They add that a test or instrument is considered valid, if it measures what the researcher is attempting to measure. Once again, these definitions are entrenched in positivist epistemological assumptions, about a singular reality that exists beyond our experiences of it, but with which we can interact directly.

The 'ideal' of examining one reality is understood within this discussion, in terms of obtaining hard objective data; however, the epistemological assumption that rejects the existence of multiple realities is considered flawed. For example, the 'door to needle' timeframe if measured with clock-watch precision, may yield accurate and reliable data about the amount of minutes expended and as such provides one view of patient care. However, accepting this objective timeframe as the only valid reality of thrombolytic treatment times, fails to take account of the social, behavioural, political, economical and institutional contexts associated with the lapsed time and its eventual interpretation. More recent definitions of this concept claim to be common to qualitative and quantitative research approaches (Avis 1995) and suggest that a study is valid when the findings reflect reality and the meaning of the data is accurately interpreted (Hinds et al 1990). Therefore, what the Dublin MATHS 2001/2 MI Census purported to measure was one reality of patient care, which was predominantly captured in minutes. It did not reject the existence of other realities, nor did it assume that the recording of treatment-times or their interpretation could ever be value-free. However, where possible, attempts were made to ensure that the timeframes recorded were valid representations of this one reality.

- **Construct/Reality Validity**

The validity of a data collection tool such as the Dublin MATHS 2001/2 MI Census was previously considered to comprise of three distinct themes, which included content-related, criterion-related and construct-related validity. However, Goodwin (1997) in a critique of measurement validity suggests that this concept may now be viewed as a single entity, with construct validity as its central theme. Construct validity is the ability of the instrument truly to measure the concept or reality of interest accurately. The concept or chosen reality in the present study was timeframes to treatment and therefore the validity of the Dublin MATHS 2001/2 MI Census referred to the extent to which the Census form yielded accurate data about the 'time' reality or variable. To estimate the existence of construct validity, Gaberson

(1997) suggests that the researcher must gather validity evidence. In the current study, this was mainly sourced from content-related evidence.

- **Content-Related Evidence**

Content-related evidence is concerned with the ability of the instrument to measure the dimensions of the construct and is often referred to as the domain of the construct. It usually involves seeking assurances from different reliable sources, that the items included in the instrument are both representative and comprehensive. These reliable sources of evidence included a thorough search of relevant literature and a critique of previous Irish MI Censuses to support the inclusion of items that were deemed both appropriate and current measures of the construct/reality domain (see section 4.4.). Content-related evidence was also obtained from content experts who are asked to judge the extent to which the instrument items appeared to measure the various reality timeframes. In the current study, the Dublin MATHS 2001/2 MI Census was presented to a panel of ten experts. These included 3 consultant cardiologists, 1 A&E consultant, 4 nurse managers from coronary care, 1 researcher and 1 statistician. The process included a reflection on the posed research questions and an initial brainstorming session with individual experts to ensure that all relevant issues were covered by the Census form. The experts were then asked to judge the appropriateness of each item included on the pre-piloted Census form. Table 3 demonstrates the proportion of agreement between experts.

Table 3

Level of Agreement between Experts			
Item/Agreement	**Immediate Agreement**	**Agreement with discussion**	**Disagreement**
Items 1-3, 6-10, 13-21	100%		
Item 4 (Occupation)	70%	10%	20%
Item 5 (Insurance Status)	80%	10%	10%
Item 11 (Triage nurse)	80%	20%	
Item 12 (Medical Assessment)	80%	20%	

Of 21 items reviewed, 17 obtained an 'immediate agreement' score of 100% between the panel of experts. Three of the remaining four items received an 'immediate agreement' score of 80% whilst item 4 obtained the lowest score (70%) of all items reviewed. Two content experts (researcher and statistician) considered item 4 (occupation) to be an inadequate and unreliable method of ascertaining socio-economic status of MI patients, especially in the case

of female patients. A score of 70% suggested a threat to the validity of item 4; however, it was agreed that although problematic, the fate of this item would be finally considered following the pilot study of the Census form. One content expert (consultant cardiologist), considered that item 5 (insurance status) was irrelevant to treatment time delays, however others suggested (researcher and statistician) that insurance status may be an appropriate 'alternative' indicator of socio-economic status, if indeed item 4 proved unsuccessful. With an 80% 'immediate agreement' score and 10% agreement with discussion score from another panel expert, it was agreed that item 5 remained on the Census form during piloting.

Two content experts (1 consultant cardiologist and 1 A&E consultant), suggested that instead of including nurse triage and medical assessment times (items 11 & 12), first ECG and first abnormal ECG times be recorded as an alternative. There was much discussion regarding the additional inclusion of these items with the existing items 11 & 12, or whether they should indeed replace items 11 & 12. However, the recording of such data, although useful in establishing factual times of clinical diagnosis, was considered problematic, in relation to the potential for random error in the retrieval of written retrospective diagnostic ECG data. It was also acknowledged that quality proofing of data transcriptions in the six A&E departments would be warranted if the additional items were included in the study. It was therefore considered beyond the scope of a sole researcher to quality proof all data in the 12 A&E and CCU departments during a 12-month Census.

Items 11 and 12 were considered important treatment landmarks and marginally less problematic in relation to their potential for random error. However, although their inclusion was endorsed by the A&E consultant, it was also suggested that individual practitioners might record their assessments in different ways. The A&E consultant added that some medical practitioners would write their assessment times as they examined the patient, whilst others would wait until afterwards. This variation in recording practices may also have produced a further potential for random error; however, it was acknowledged that once again it would be unfeasible to check-up on all A&E record entries. Items 11 & 12 therefore remained on the Census form during piloting, but it was acknowledged by all concerned that future comparative studies, incorporating larger research teams, would benefit from obtaining data related to first ECG and first abnormal ECG times. It was also acknowledged that the presence of the 'human factor' would always serve as a potential threat to the reliability and validity of the Census and demanded that in the interpretation of any findings, reference be made to this possible limiting effect.

- **Face Validity**

Gaberson (1997) suggests that another source of content-related evidence lies within the readability and/or face-validity of the instrument. Face validity is a judgement of what the instrument appears to measure. The judges of face validity for the Dublin MATHS 2001/2 MI

Census included all coronary care nursing staff members that were involved in Census form completion during the first pilot study. In order to ascertain face validity of the Census form (a judgement of what the tool appears to measure), the ten CCU staff that were involved in completing the 14 Census forms, were asked to evaluate the form (see appendix VIII) following the pilot study period. Staff evaluated the length of time taken to complete the form, the ease or difficulty of form completion and also commented on form layout, colour and art work. Staff also had the opportunity to suggest improvements to both the census form and the information sessions provided prior to study commencement. These contributions were taken on board and amendments made to their satisfaction. For further details of face validity, please see appendix VIII.

4.7.2. Simulating the Study

4.7.2.1 Experiencing the study setting, methodology, patient/nurse participation and researcher responsibilities

The two pilot studies allowed me to experience at first hand the six CCU settings involved in the collection of Census data. Practical issues such as the storage of census forms, the collection point for completed forms, the frequency and most appropriate time for Census form collection and the establishment of twice weekly communication links with each unit, were determined. The studies also allowed me to experience the actual practice of research, whilst appreciating the dependence on others to complete data collection forms. The importance of building rapport and establishing supportive networks within the units were highlighted from both studies, as was the importance of sharing a feeling of ownership of the study. In the main study, a reflexive diary was kept to record my experiences of the research role and to make sense of situations that I encountered.

Although census form completion mainly involved direct transcription from medical and nursing notes, the participation of each patient in the study was also appreciated. During patient consent in both pilots, it was found that patients were very willing to participate in the study and frequently volunteered information freely about their condition. Patients asked many questions regarding both the nature of the main research study and issues related to their own recovery. As a result, the consent procedure in the pilots ranged from 8-25 minutes for each patient. Due to the richness of conversations with patients, I decided to maintain a field journal in the main study, in order to record memos of my perceptions of these experiences (see appendix IX and main body of text).

- **Refining the Data Collection Tool**

The refinement of the data collection tool was facilitated through piloting of the actual Census form in the first study. Four additional items were included in the Census form, which were concerned with the administration of Aspirin. The decision to include Aspirin details was made following additional consultation with expert panel members. As Aspirin is considered a first line drug in the management of myocardial infarction, it was deemed a worthy item for inclusion. The suitability of the majority of items was confirmed, whilst the need to remove item 4 'occupation' became apparent (see appendix III). 'Postal Code' replaced 'occupation' as item 4, as it was considered a more objective measure of socio-economic status, however, the second pilot study highlighted potential reliability problems with this item also. In addition to refining the process of data form completion and collection, the inclusion of new items on the Census form was tested in the second pilot. No difficulties arose with the inclusion of 'Aspirin' details, but the use of 'postal code' seemed a little problematic. By the end of the second pilot study, a sample of 83 patients had a total of 33 postal areas, some of which were vague. Some participants used the terms 'North County Dublin', 'South County Dublin', 'County Dublin' instead of their commonly used postal codes, whilst other patients 'visiting' Dublin gave addresses of their Dublin relatives. The usefulness of 'postal code' became dubious at this point; however, rather than amend the form once again, or subject it to yet another pilot study, the item 'postal code' was left in place for the duration of the main study. The refinement of the data collection tool resulted in a final Census form containing 25 items (see appendix III).

- **Examining the data collection procedure both from my perspective and from that of the data collectors**

The evaluation of the pilot study suggests that the majority of staff completed the Census forms in less than 5 minutes (see appendix VIII). During information sessions it was suggested that staff should not spend longer than this period of time hunting for data and that any difficulties in data retrieval could be left for me to complete. Both pilot studies suggested that the majority of staff found the Census form easy to complete, with only some minor difficulties encountered at times. The main difficulties encountered were concerned with missing data and frustration at not being able to complete the forms. The information was sometimes difficult to retrieve from the medical notes due to the 'burying' of data. This was less likely to occur if Census forms were completed on the day of admission and by the admitting nurse. In agreement with the unit managers, Census forms were stored next to admission documentation, so that staff could naturally incorporate the Census as part of the MI admission procedure. The importance of reviewing completed Census forms became apparent during the pilot studies and remained my responsibility during the main study. I also

completed 'near completed' forms during busy times on the unit and when staff were unable to spend time hunting for data. In the second pilot study, staff were given the opportunity to become accustomed to the study details and to the process of census form completion.

- **Determining the support required by and received from CCU staff**

I also had time to become acquainted with staff members and throughout the second pilot study became a familiar sight on each of the units. Establishing and sustaining the support of six CCU staffing complements during a year-long period, was of particular concern. However, the pilot studies highlighted important areas that could potentially enhance supporting relationships both for me and staff alike. I experienced over-whelming support from CCU staff during the two pilot studies and this support was enhanced by previously developed working relationships between many staff members and myself. Establishing supportive working relationships with the unit managers was considered particularly significant in fostering support in other staff. Staff members also seemed to share a feeling of ownership for the study, due partly to its nursing origins and also to its focus on gender issues. I felt that my frequent presence on each unit was an extremely important factor, not only for the quality proofing of forms, but also as a support for staff. Staff were continuously reminded of the on-going Census, queries were answered and when too busy to complete Census forms, I carried out this role. I felt that my twice-weekly presence on each unit, would support the efforts of staff and would hopefully help to sustain their interests in the study.

It was also considered that careful marketing of the study would assist in its successful completion. Large posters (4ft x 3ft), designed in conjunction with CCU staff, were placed in strategic places on the units. The posters consisted of a female MI patient being cared for by a female Coronary Care Nurse, both of whom had given their permission to be photographed. These posters heralded the commencement of the Dublin MATHS 2001/2 MI Census and further served as a constant reminder to staff that a Census was in progress. On-going support for staff was facilitated with three monthly feedback /information sessions organised in agreement with the unit manager, as were additional information sessions for newly appointed staff members.

- **Identifying actual and/or potential ethical concerns emerging as a result of the study**

The issue of consent became an ethical concern for me during the pilot study. The pilot study highlighted the fact that the process of gaining consent occurred at a particularly vulnerable time for many patients due to a combination of critical illness and ageing years. The pilot study allowed for a re-examination and refinement of this consent procedure to my satisfaction. Although physiologically stable, the impact of a potential life threatening illness

seemed to leave many patients in a somewhat vulnerable position. All patients included in the Census were incredibly grateful for the care that they had received and perhaps felt obliged to participate. To this end, some patients were willing to sign a consent form even though they couldn't read the script (i.e. no reading glasses available). Therefore, I made great efforts to inform all patients fully of the study details and where relevant I read aloud the information included on the consent form. Furthermore, every item on the Census form was outlined to the patient and where appropriate, each patient had the opportunity to comment on the accuracy of the data that had been obtained from her/his medical notes.

- **Refining Data Analysis Techniques**

Due to the small sample size in the first pilot study, only descriptive statistics were performed. However, many ideas for data analyses emerged, especially when witnessing the skewed nature of timeframe distributions. The median was considered the most appropriate statistic to be used in this case and relevant statistical tests would be used to compare medians between two groups or more. It was clear that proportions of all categorical data from 2-7 could be compared using a chi-square test, whilst their use in multivariate analyses of timeframes, would provide information not only on gender aspects of pathway timeframes, but also on behavioural features (e.g. referral source, admission route). Regression analyses of these variables would take place with log-transformed timeframes, due to the skewed nature of their distributions. Age was normally distributed and so the mean was considered the most appropriate statistic of central tendency, whilst the 2-sample t-test would be used to compare differences between the genders. Although age is a continuous variable, its use as a categorical variable would also facilitate its inclusion in multivariate analysis. It was considered that time frames to treatment would create a visual impact if presented in cumulative graphs to treatment, whilst the use of tables would condense otherwise lengthy descriptions to a concise alternative.

- **To Determine the Feasibility of the Study**

Finally, one of the principal aims of carrying out the second pilot study was to determine the feasibility of the main study. Of particular concern were the practicalities associated with census form completion and collection. The overall pilot study findings suggested that with structured information sessions prior to Census commencement, satisfactory form completion was achievable. The pilot study also highlighted the extremely important 'reviewing' role that I would ultimately carry out on each of the completed census forms. Data form collection was most successful when carried out twice weekly with a 3-4 day gap between collection days. This limited the potential for 'missed' patients and facilitated gaining patient consent. I made telephone contact with the units on Mondays and Thursdays of each week and was informed as to the admission of new MI patients. I then visited the unit to collect and/or complete Census forms and to gain the consent of patients. A brightly coloured storage box for completed forms was sited at the central nurses' station, in which forms were placed for my

collection. When no new MI admissions were present on the unit, no visit was made. The feasibility of visiting each of the six units twice weekly was tested and proved possible. Following the two pilot studies, the Dublin MATHS 2001/2 MI Census commenced December 1st 2001 and was completed by November 30th 2002. The reality of conducting the census over this year period is documented below.

4.8. The Reality of the Dublin MATHS 2001/2 MI Census

In line with feminist research commitments, I kept a reflexive diary (see main body of text) of my experiences as a researcher and a field journal (see appendix IX and main body of text) of patient contact during the year of Census data collection. In the reflexive diary, I documented thoughts regarding my researcher's role and experiences and used these reflections to help me understand different situations that I encountered. In my field journal, I documented issues of concern or interest in the research arena and also recorded memos of my many conversations with patients during the consent procedure. The following discussion outlines some of these recorded entries and how they helped me to make sense of the research reality.

- **Dealing with Data Collection Problems**

Lots of little problems arose from time to time during the study, many of which could be dealt with through discussions with staff and/or the provision of additional instructions. The first issue was the problem of missing A&E data, where occasional triage or medical assessment times were unavailable.

Excerpt from Field Journal (Week 3):

> *It's happened again....another missing medical assessment time! I think this might be a recurring problem. I wonder if I can glean the information from any other source, or should I leave these entries blank? Must talk to research supervisors about this...!*

As well as speaking to research supervisors, I also asked the advice of CCU unit managers. We agreed that, in the event of any future incidents of missing data, then CCU staff should leave the timeframes blank. I would then attempt to triangulate the missing timeframe(s) by scanning nursing and medical notes for evidence of estimated timeframes, e.g. time of first set of observations recorded by the triage nurse, or the time of medical assessment reported in the nursing notes. Where possible I would ask patients to clarify these timeframes; however, if no evidence was available, then these timeframes would remain blank.

The second issue arose during the first month of data collection, when I almost missed two eligible patients in hospital (6).

Excerpt from field journal (week 3):

> *I never thought of this one, but staff aren't seeing primary PTCA patients as MI patients because they've been 'cured' before they arrive into the unit. Nearly missed a couple of patients because of this confusion – will talk to the unit managers about this issue!*

Hospital (6) carried out the greatest number of primary PTCA procedures, many of which were performed prior to the arrival of the patient to coronary care. Therefore, by the time the patient was admitted to the unit, some nurses categorised the condition of the patient, not as MI, but as PTCA. Following this episode, staff in all hospitals were advised to complete Census forms on all eligible MI and primary PTCA patients. I then quality proofed forms to ensure all patients had a confirmed MI diagnosis. However, throughout the course of the year, approximately nine eligible patients were missed. This usually occurred during very busy times on the units, when with high staffing and patient turnover, the inclusion of an eligible patient would be forgotten.

Excerpt from field journal (week 46):

> *Have missed another patient- think that's the 9th one! The girls forgot to tell me about him– they've been hectic all weekend and thought that he had been included in the Census already! Think they're more disappointed than I am – they're still trying to beat hospital (2) in the admission race!*

- **Experiencing Life as a Sole Researcher**

My first few visits to each unit occurred during the second pilot study and although I knew some staff on each unit, I found it a little unnerving and quite humbling to walk into unfamiliar work places for the first time. Staff members who had not previously known me, were willing to accept an extra workload from me (i.e. census form completion) so that I could have the Census data for the study. Although I found the travelling a little lonely, the camaraderie and support of staff was quite uplifting.

Excerpt from reflective diary (week 3):

> *Visited all six units today – went really well. I've now surrendered to this new role and rather than rush from place to place, I'm now spending more time on each unit and beginning to enjoy the company.....49 weeks to go!!!!!*

For the majority of visits to each unit over the year period, I was met with friendly and supportive staff. However, I was acutely aware that I was arriving into extremely busy units and that I had in some ways increased their workload, as a result of the on-going Census.

Although this additional workload was never mentioned, I often felt embarrassed that I had added to their already busy schedules.

Excerpt from reflective diary (week 27):

> *It's actually a standing joke now! I'm told that when I ring twice a week to check on new MI admissions, there's a sudden flurry to complete Census forms before I arrive to the unit! It's actually quite funny - the staff and I were giggling about it today! They're all so good about it, but I'm also a little embarrassed!*

- **Participants**

The patient contact was an extremely enjoyable and energy enthusing part of the data collection experience. Patients were generally very obliging and eager to participate and despite their recent illness scare, were usually more than willing to recount their experiences. As part of my consent procedure, I showed each patient their individual Census form and the information recorded on it. Where possible, I asked participants to verify or clarify timeframes and this prompting would inevitably lead to conversations about their illness experience. Contrary to what I had expected, participants seemed to have extremely vivid memories about their ordeal, knew exactly when their symptoms had started and could recall the sequence of events up until their hospitalisation. Following admission to A&E, the sequence of events tended to be less than clear for many.

Excerpt from field journal (week 11):

> *Spoke to a gentleman today, who told me about his MI experience. He said that he had severe chest pain at ten o'clock at night when he was down the country for the weekend, about 250kms away from Dublin. However, rather than go to a nearby hospital, he drove his car back to Dublin, because all his medical notes were in hospital (2). He told me that he knew he was having a heart attack, but was sure that he could make it back in one piece. However, he also said that many times he had felt really weak behind the wheel, but was determined that he wouldn't pass out! He didn't remember anything after he arrived into A&E! I must have looked shocked, because he laughed and said, 'don't worry love, they've all told me off already about it.'*

Participants seemed to find the recounting of their story therapeutic and although I am uncertain about the validity of this perception, I frequently found that I had to pull myself away from the conversation, because of time constraints. Most consent procedures lasted approximately 10-15 minutes, however there were many occasions when I had to excuse myself from the conversation after 20-30 minutes.

Excerpt from reflexive diary (week 19):

> *Visited all six units today - started at 10:00am and have just returned home at 19:20. I can't believe it's taken me so long, but it all just takes so much time. Between the travelling, parking, sourcing patients and then waiting for them to finish their 'rest-time' or 'meal-time'...there's a lot of hanging around waiting. But the main thing is, I can't get away. Once I start chatting to the participants about their Census form, they tell me everything that has happened to them and I feel that it's unfair to cut the conversation short. It's great stuff, but exhausting!*

The issue of informed consent and voluntary participation kept coming back to me. Although I tried my best to ensure participants were informed of the study details and that they were happy to partake in the Census, I frequently felt that it was unfair to approach them whilst hospitalised. I felt that sometimes patients were so grateful to have survived their ordeal that they would have agreed to partake in anything.

Excerpt from reflexive diary (Week 16):

> *I really wonder about this whole consent business! I find that patients, especially older ones, are extremely trusting, really grateful for the care they have received and maybe feel obliged to repay this care by giving something back. They're also in a very vulnerable position, recovering from an MI and sitting up in bed or in a chair, wearing nothing but pyjamas. 'Wonder am I taking advantage of this situation....can't think what else I can do to make this better!*

- **Views of Coronary Care**

I found that in visiting six coronary units twice weekly for a year, I was obtaining quite a unique view and experience of the working life of each unit. I could see many commonalities between units as well as those aspects that made them different. Units had varying levels of staff and equipment available, patient and staff turnover were different, yet they were all extremely proud of their individual unit's high standards of patient care.

Excerpt from reflexive journal:

> *I feel that I have a unique viewpoint of all six coronary care units! I actually don't believe that any other nurse has had the same opportunity to observe the life of these six units either individually or as a group, over the same period of time. They're all different yet so similar.....basically though, nurses have the same concerns and same high ideals of care for their patients. They also seem to share the same frustrations regarding apparent inadequate staffing levels and funding resources.*

This pride in standards of care became quite apparent when on numerous occasions I would be asked how different hospitals were doing in relation to their 'door to needle' time and which one was doing best. Nurses frequently tried to guess which hospital had the greatest admission rate, which one had the slowest door to needle time and which one had the best & worst treatment of women with MI.

Excerpt from reflexive journal (Week 40):

> *Don't know what was in the air today, but got totally quizzed about the standard of play on different units. Two unit managers asked me in confidence, about the 'door to needle times' in other units and wanted to know how their 'door to needle times' compared. There also seems to be an 'admission race' on....units have been obviously talking to one another and two hospitals are trying to out-do one another in their rate of annual admissions. It's all quite light hearted (I think), but as usual, I give nothing away!*

4.9. Conclusion:

This methods chapter has included an audit trail outlining the deliberations and decision-making processes involved in selecting my data retrieval method, the design and layout of the Dublin MATHS 2001/2 MI Census form and the items to be included in the finalised version. An account and rationale for the inclusion of census items suggested that items were not only appropriate to the present study but would also serve to extend the findings of the two previous censuses. The performance of two pilot studies and tests of measurement, were considered essential in limiting threats to the validity and reliability of the tool. The nature of the Dublin MATHS 2001/2 MI Census suggested that ethical issues related to the protection of the individual's rights and the wider political context, would emerge throughout the course of the study. These issues included concerns related to confidentiality, voluntary participation, informed consent, researcher/researched relationship and the dissemination of findings. I considered that the adoption of a principle-based ethical framework that included the principles of beneficence and respect for autonomy and justice would provide a sound basis for ethical decision-making during the study. The use of a reflexive diary and field journal helped me to make meaning of the research experience. They also provided me with some real-life descriptions and contextual contributions, to what could have been an otherwise lifeless numerically driven data collection procedure. The field-journal of memos, although purely a perception of conversations that occurred between the participants and me, was considered a source of rich and extremely useful data. Following the findings of the Dublin MATHS 2001/2 MI Census, these memos served to inform the subsequent qualitative inquiry.

Chapter 5

Strand 1: Findings & Discussion

5.1 Introduction

This chapter describes the gender-specific results emanating from the Dublin MATHS 2001/2 MI Census and the statistical methods used. The results are outlined according to participant characteristics, as well as pre-hospital, A&E, reperfusion and transfer timeframes. A discussion of findings then ensues, with comparisons made with national and international literature. Both the findings and discussion sections are punctuated with excerpts taken from my field journal and contribute valuable contextual insights to the numerical data. The findings of this first strand provide the impetus and urgency for the qualitative strand and this is alluded to during the concluding statements of this chapter. For a detailed comparison between the findings from the Dublin MATHS 2001/2 MI Census and the 1992 & 1994 Censuses, please see appendix X.

5.2. Statistical Methods

- **Distributions:**

Statistical analysis was carried out using STATA version 8.2 for Windows. The distributions of the various timeframes were examined for women and men separately. The empirical distributions were firstly examined with overlaid theoretical distributions based on a Gaussian distribution. For all the timeframes there was a strong positive skew. This examination was repeated using the log-transformed timeframes. The log transformation removed the skew and yielded distributions that appeared consistent with a Normal distribution. I examined this in more detail using a visual inspection of quantile plots for the log-transformed times. The empirical quantiles were plotted against the corresponding quantiles where again the log-transformed times appeared to be approximately Normal (see appendix XXII). Large or systematic departure from the diagonal is evidence of non-Normality, whilst data that are normally distributed will fall close to the diagonal. (Denables & Ripley 2001). Age was the only normally distributed continuous variable.

- **Univariate Analyses:**

As all time-frame distributions were skewed, univariate analyses on all timeframes were calculated and described using the median statistic and the inter-quartile range. The median was used because it is more robust to outliers in skewed data and provides an estimate of the centre of the data. One in four lie above the upper quartile and one in four below the lower quartile. As such, the median statistic together with the lower and upper quartiles, describe the spread of data in the timeframes of patients. During univariate analyses, the Kruskal Wallis test or Mann Whitney tests were used on these continuous data to compare the median timeframes in different groups.

These tests are non-parametric rank tests that compare time-frames of different groups without assuming an underlying normal distribution for the time frames. Age was the only normally distributed continuous variable. A two-sample t-test was employed for comparing average age (mean) between women and men.

I also analysed the categorical outcomes such as referral source, admission route, insurance status, against gender using a chi-square test. Results of univariate analyses are summarised as mean (SD), median (Inter-quartile range (IR:) from Q1 to Q3) or n (%) as appropriate.

- **Multivariate Analysis:**

The time-frame differences between groups, as well as been influenced by gender, might also have been explained by the effect of other factors such as age, insurance status, referral source, or admission route. For example, differences in the 'intense symptom onset to A&E' times for women and men might partly be explained by the effect of a factor such as admission route. I therefore considered multivariate analysis that compared the time-frames in different groups whilst allowing for the effect of additional factors. Unless otherwise stated multivariate models included the categorical variables age, insurance status, admission route, time of arrival to hospital, referral source and hospital. For this analysis, age was categorised as under-55, 55-64, 65-74 and 75 or older.

For the various timeframes, which were continuous data, I compared average levels in women and men using an ANOVA model. The ANOVA model allowed a comparison of the average timeframes in men and women whilst controlling for the effect of the above additional variables. As mentioned the various time-frames had distributions that were highly skewed so the ANOVA models looked at differences in the log-transformed times.

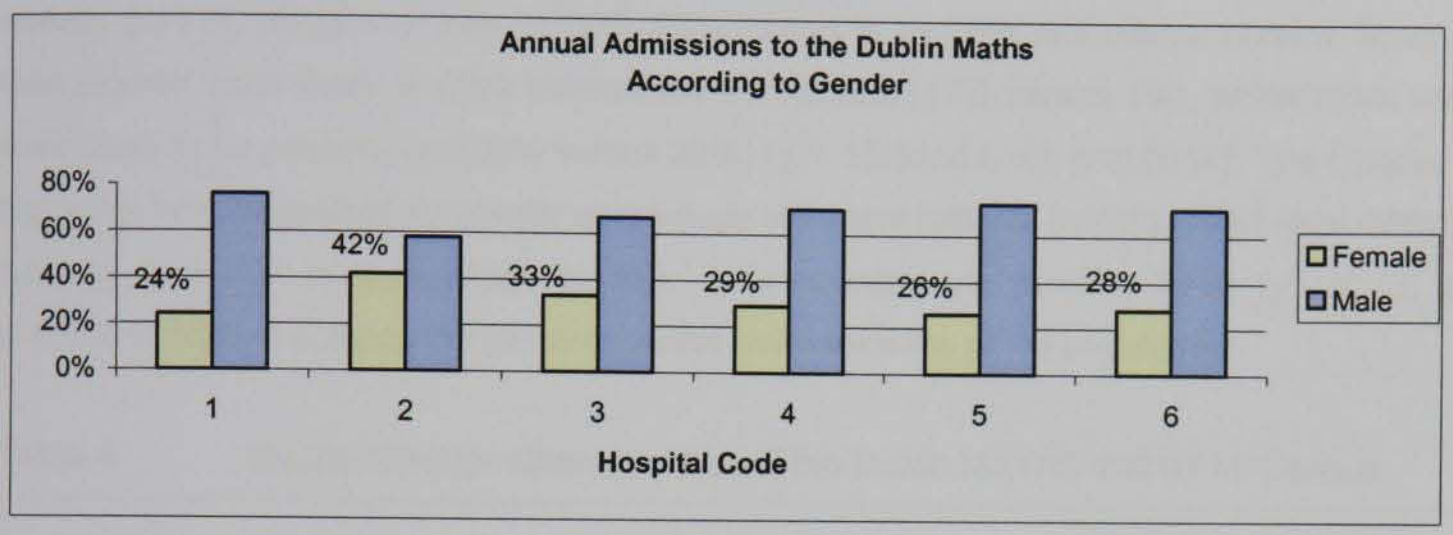
When considering dichotomous (yes or no) outcomes, for example whether subjects received treatment with the recommended 30-minute time frame against gender, I used a multivariate logistic regression. This model is similar to the ANOVA model except that it compares the odds of a particular outcome in women and men. The results are summarised as odds ratios (female vs. male). The odds ratio is the odds of a particular outcome for a woman relative to that for a man.

For all analyses, when comparing times for women and men, I use the terms significantly longer, significantly greater, or significantly shorter, to indicate that observed differences were positive and statistically significant, based on a two-sided test of statistical significance. An alpha level of 0.05 (level of significance) was set .i.e. p value is less than 0.05

5.3. Results

During the study period, data were collected from a total of 890 participants, 277 (31%) female and 613 (69%) male patients with a confirmed diagnosis of MI. The six hospitals varied in their percentage of women and men admitted to CCU, with highest percentages of female admissions at 42% (n=83) occurring in hospital 2, whilst the lowest female admission rate of 24% (n=40) occurred in hospital 1 (figure 1).

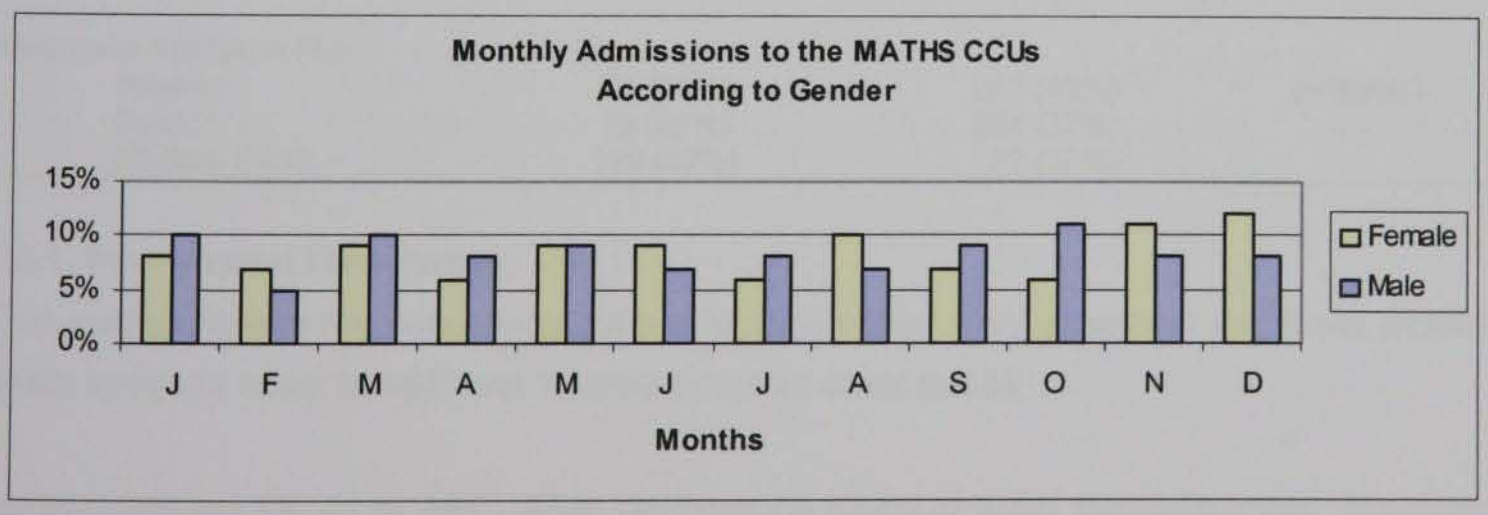
Figure 1



(chi ^{2}=17.0 df=5, p<. 01)

The highest admission rate of 9.8% (n=87) occurred in March with the lowest admission rate occurring in February 5.8% (n=52). The months of June, July & August also witnessed low admission rates – approximately 7.4% (n=68) patients per month (figure 2). Female patients were more likely than men to be admitted during the winter months of November (11% versus 8%) and December (12% versus 8%), whilst more males then females were likely to be admitted during October (11% versus 6%) (chi ^{2}=19.9, df=11, p=.04)

Figure 2



(chi ^{2}=19.9, df=11, p=.04)

The mean age for women 69 (SD=12) years, was significantly different than the mean age of males 61 (SD=12) years, (t=9.26, p<0.0001, 2-sample t-test). An examination of insurance status demonstrated a significant variation between women and men, with women (n=129, 47%) likely than men (n=127, 21%), to be in possession of medical cards (means tested benefit) whilst men (n=261, 43%) were more likely than women (n=69, 25%) to have private health insurance (χ^2= 64.57, d.f. =2, p<0.0001). Approximately 28% (n=78) women and 37% (n=225) men were public patients (had neither medical card nor private health insurance). The mode of admission to hospital was also significantly different between women and men; however, the majority of women (n=174, 63%) and men (n=365, 60%) opted to use the ambulance service. More men than women were likely to drive themselves into hospital (7% versus 1%), whilst more women were likely to be passengers (33% versus 29%) (χ^2= 15.54, d.f. =3, p<0.0014). The Census also highlights how a significantly greater percentage of female patients (n=136, 49%) were referred to A&E by their GP in comparison to their male counterparts (n=319, 30%) (χ^2=30.73, df=1, p<0.0001) Table 4 outlines the gender specific characteristics of the population.

Table 4 Gender Specific Characteristics of the Dublin MATHS 2001/1 MI Census

	Female	Male	P values
Gender: n (%)	277 (31%)	613 (69%)	
Age:			
Mean (SD):	69 (12)	61 (12)	p<0.0001
Referral Source: n (%)			
GP:	136(49%)	183 (30%)	p<0.0001
Self:	141(51%)	430 (70%)	
Admission Route: n (%)			
Ambulance:	174 (63%)	365 (60%)	P=0.0014
Car Passenger:	92 (33%)	178 (29%)	
Public Transport:	8 (3%)	27 (4%)	
Car Self	3 (1%)	43 (7%)	
Insurance Status: n (%)			
Private:	69 (25%)	261 (43%)	p<0.0001
Public:	78 (28%)	225 (37%)	
Medical Card:	129 (47%)	127 (20%)	

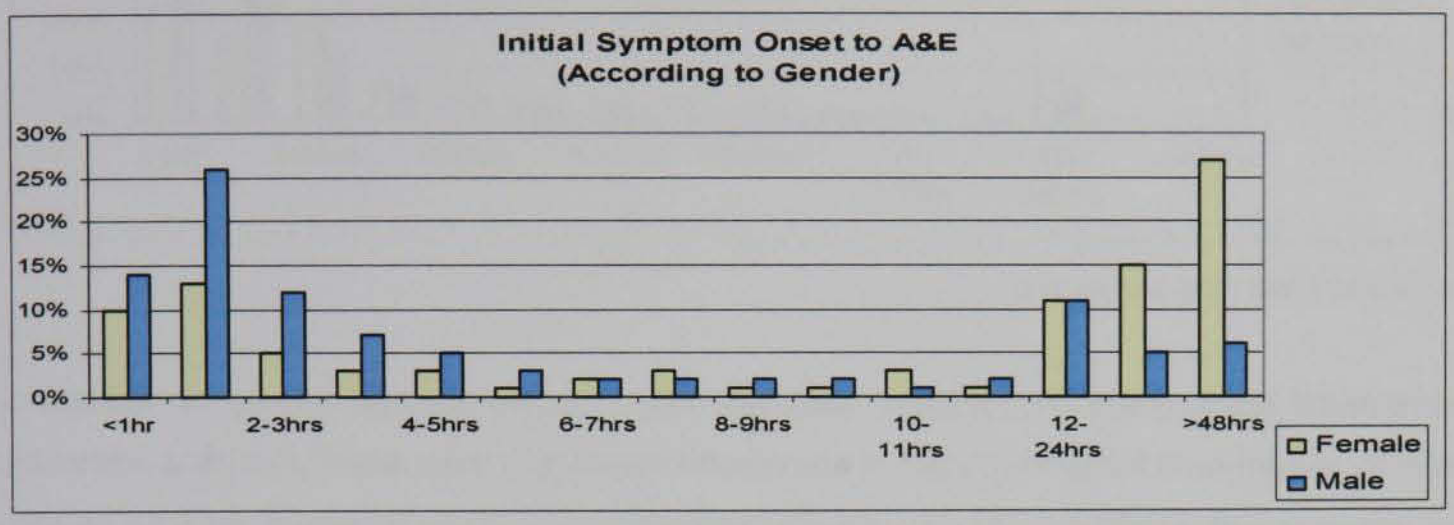
5.3.1. Pre-Hospital Timeframes

Two median timeframes concerning the pre-hospital period were examined and these included 'Initial symptom onset to A&E' and 'Intense symptom onset to A&E'.

Initial Symptom Onset to A&E: When clarifying the timing of 'initial symptom onset' (Question 8 on Census form, Appendix III) patients were asked the following question: 'In relation to this hospital admission, when did you start feeling unwell?' A gender specific delay emerged in these

results, with a significantly greater 'initial symptom onset to A&E' timeframe associated with female patients, median 14 (IR: 2.8 to 50) hours in comparison to their male counterparts, median 2.8 (IR: 1.3 to 10.5) hours ($z=10.1$, $p<0.0001$ Mann Whitney U-test). Figure 3 is an illustration of the time taken by each gender to reach hospital following initial symptom onset.

Figure 3

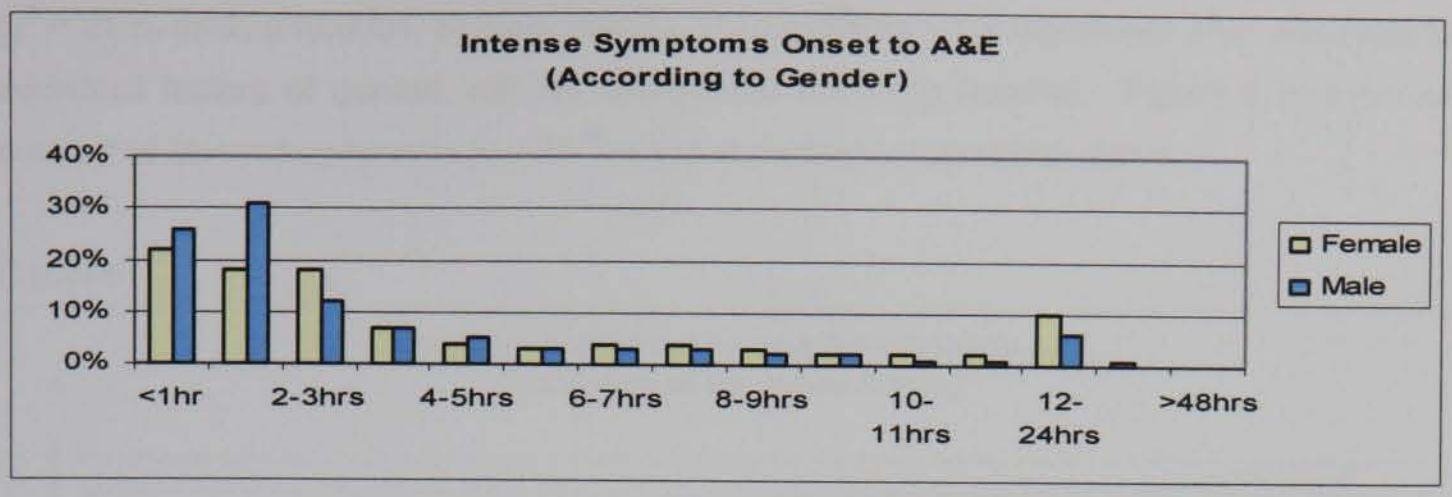


($z=10.1$, $p<0.0001$ Mann Whitney U-test)

Intense Symptom Onset to A&E: When clarifying the timing of 'intense symptom onset' (Question 8 on Census form, Appendix III) patients were asked one of the following questions: 'When did you start feeling worse?' or 'When did your symptoms become bad'? Median timeframes demonstrate a significantly greater delay associated with female patients, median 3.1 (IR: 1.4 to 7.8) hours, in comparison to their male counterparts, median 1.8 (IR: 1.0 to 4.2) hours, ($z=6.68$, $p<0.0001$ Mann Whitney U-test). Thus, even when they felt worse or their symptoms became bad women still delayed seeking medical attention.

Some female patients tried self-help remedies such as 'lying-down,' 'taking antacids,' and 'having a bath' (excerpts taken from field journal). Many reported feelings of disbelief saying that 'I never even expected it was my heart' and 'I just thought it was bad indigestion and would eventually go away'. Women as well as men commented on this inability to label their symptoms to a cardiac origin and reported a common misperception that 'a heart attack would be much more dramatic' (excerpts taken from field journal). Figure 4 is an illustration of the time taken by each gender to reach hospital following intense symptom onset

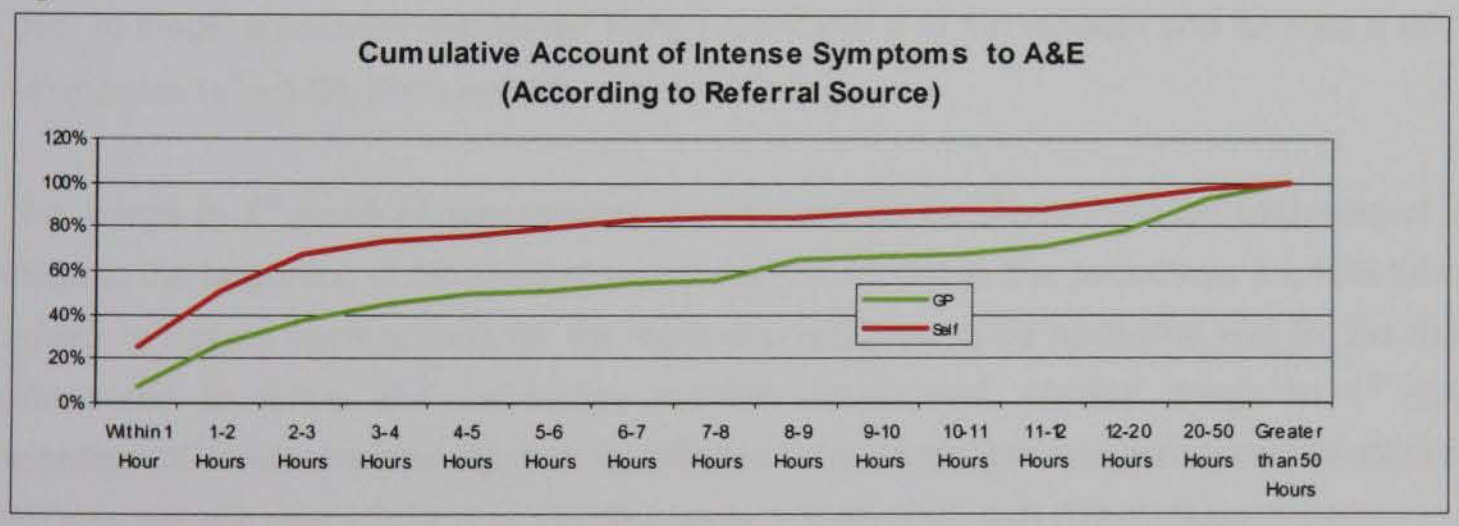
Figure 4



(z=6.68, p<0.0001 Mann Whitney U-test)

In addition to gender specific delays, other variables impacted on pre-hospital timeframes. In univariate analyses, there were significant differences in the pre-hospital time-frames of patients utilising different modes of admission to hospital (χ^2= 64.2,df=15, p<0.0001). For example, arrival to hospital by ambulance was associated with a median pre-hospital delay of 1.8 (IR: 1.0 to 3.6) hour, whilst patients who drove themselves into hospital had a median pre-hospital delay of. 1.2 (IR: 0.67 to 4.6) hours. Those patients referred by their GP experienced significantly longer delays, median 3.9 (IR: 1.5 to 9.0) hours, than those self-referred, median 1.7 (IR: 1.0 to 3.5) hours, (z=8.76,p<0.0001 Mann Whitney U-test). These effects remained significant even after adjusting for the additional factors of age, gender, insurance status and admitting hospital. Figure 4 is a cumulative account of 'intense symptoms to A&E' according to referral source

Figure 5

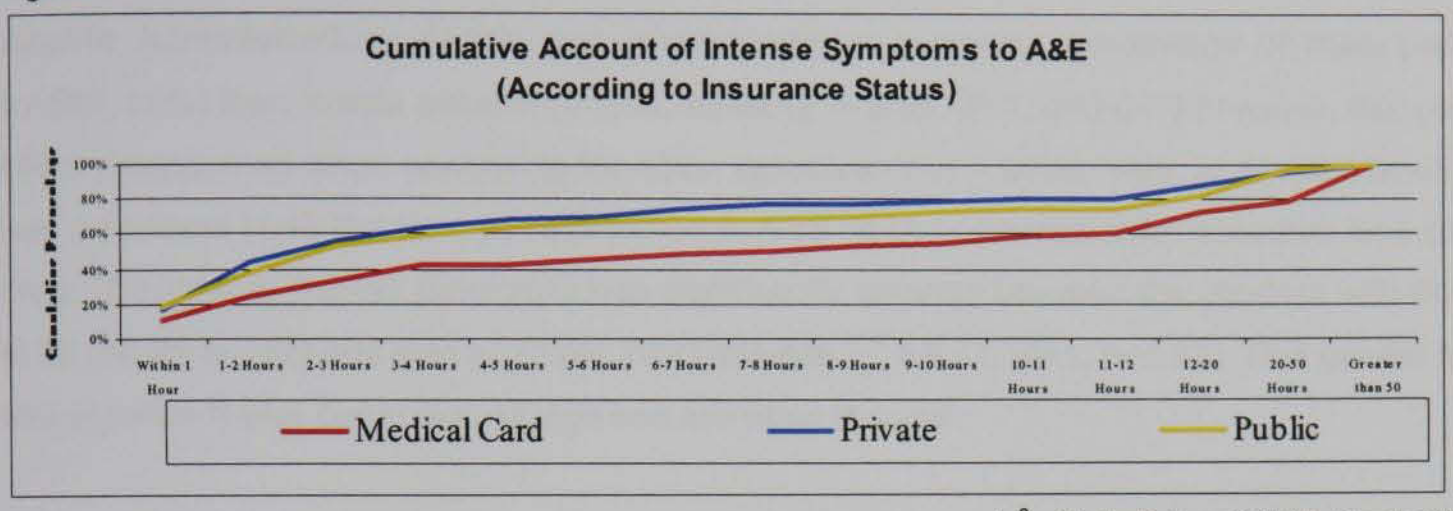


(z=8.76,p<0.0001 Mann Whitney U-test)

Patients aged greater than 64 years experienced significantly longer 'intense symptom onset to A&E' delays, median 2.5 (IR: 1.3 to 6.4) hours, than younger patients, median 1.7 (IR: 1.0 to 4.9) hours (Z=-2.97,p=0.0029 Mann Whitney U-test). Patients with private health insurance were likely

to experience significantly shorter delays, median 1.7(IR: 1.1 to 3.7) hours, than public patients, median 2.2 (IR: 1.0 to 6.0) hours, or those with medical cards, median 2.4 (IR: 1.3 to 7.0) hours (χ^2 = 21.8, df=2, p<0.0001, Kruskal Wallis). These effects were significant after adjusting for the additional factors of gender, referral source and admitting hospital. Figure 6 is a cumulative account of 'intense symptoms to A&E' delays according to insurance status.

Figure 6



(χ^2 = 21.8, df=2, p<0.0001, Kruskal Wallis)

5.3.2. A&E Timeframes

In an attempt to ascertain potential in-hospital factors that may contribute to treatment delay, 'door to triage,' 'triage to 1st medical assessment' and 'door to 1st medical assessment' timeframes were calculated.

The ***'door to triage'*** timeframe indicated the length of time patients were waiting to be seen by a triage nurse, rather than the time taken for the actual triage process to be performed. The median 'door to triage' timeframe was similar for women 7 (IR: 3 to 15) minutes and for men 6 (IR: 1 to 14) minutes (χ^2 = 3.68, df=1, p>0.050, Kruskal Wallis)

The ***'triage to 1st medical assessment'*** represented the timeframe from the beginning of nurse triage to the beginning of 1st medical assessment. Included in this period was the time taken for nurses to assess each patient, for the medical practitioner to be contacted and for the medical practitioner to arrive and commence medical assessment. Median 'triage to 1st medical assessment' timeframe was significantly different between the genders with women at 19 (IR: 3 to 60) minutes and men 10 (IR: 2 to 32) minutes (χ^2 = 9.55, df=1, p<0.002, Kruskal Wallis)

The ***'door to 1st medical assessment'*** timeframe was calculated from the time of registration in A&E, to first contact with a medical practitioner. Included in this timeframe was the time waiting for triage, the actual nurse-triage process and then the time taken to obtain first medical contact.

The median 'door to 1st medical assessment' timeframe was significantly different between the genders with women at 30 (IR 12 to 74) minutes and men at 20 (IR: 9 to 48) minutes (χ^2 = 15.14, df=1, p<0.0001, Kruskal Wallis) These gender effects were significant when controlling for other variables.

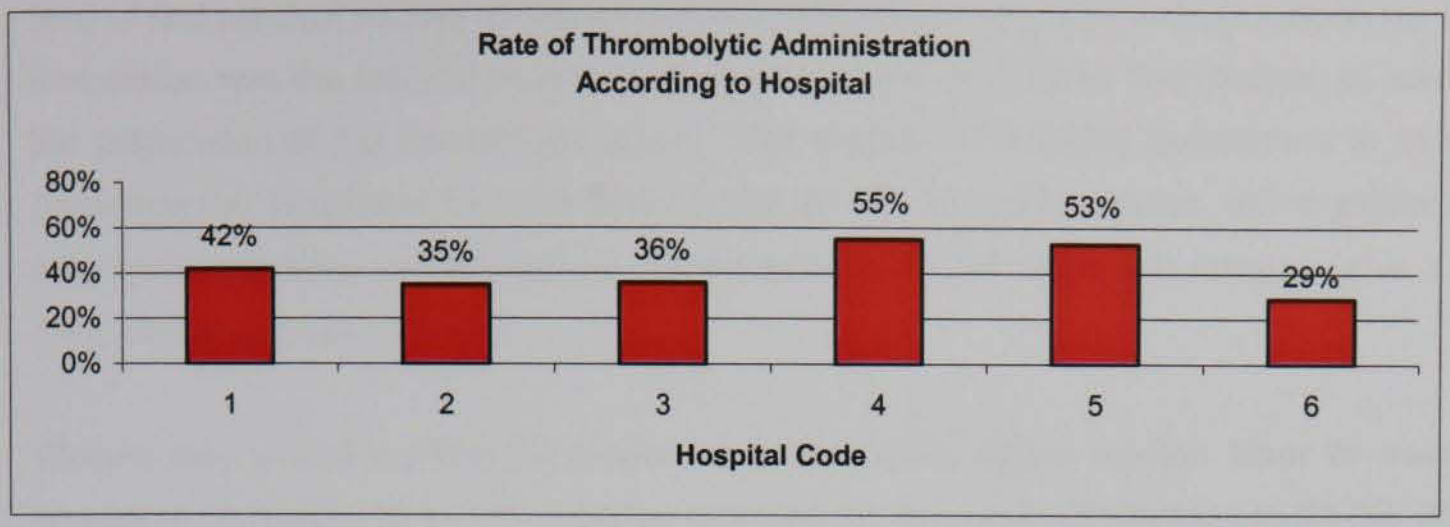
5.3.3. Reperfusion Treatments and Timeframes

Aspirin Administration: Aspirin was administered to a greater percentage of male patients (n=583, 95%) than female patients (n=254, 92%), (χ^2 = 3.95, df=1, p<0.047) however, this gender effect disappeared when controlling for other variables. The median 'door to Aspirin' timeframe was calculated from the time of registration in A&E to the recorded administration time of the drug. The 'door to Aspirin' timeframe was significantly different between the genders with women at 50 (IR: 25 to 152) and men at 22 (IR 7-37) minutes (χ^2 = 5.41, df=1, p<0.02). This gender effect was significant after controlling for age and admitting hospital.

The A&E department was the site of 82% (n=729) of documented Aspirin administration, with 3% (n=24) of patients documented as receiving their treatment in an ambulance, 5% (n=43) received their treatment in CCU, whilst for a further 10% (n=94), Aspirin was either self administered or administered by the GP. A sub-group analysis by referral source suggests that of the 319 patients referred by their GP, only 14% (n=45) of patients were documented as having Aspirin self-administered or administered by their GP.

Thrombolysis: Male patients (n=263, 43%) were more likely to receive thrombolysis than their female counterparts (n=96, 38%), (χ^2 = 5.39, df=1, p<0.020); however, this gender effect disappeared when controlling for other variables, adjusted odds ratio 1.20 (0.87, 1.64). The rate of thrombolytic administration varied amongst the six hospitals with the highest rate of 55% (n=47) recorded for hospital 4, whilst hospital 6 recorded the lowest use of this treatment at 29% (n=42)(χ^2 = 30.8,df=5, p<0.0001) (figure 7).

Figure 7



(chi ^{2} = 30.8,df=5, p<0.0001).

Although the reasons for non-thrombolytic administration were similar for women and men (table 5), women were more likely to have 'too late' cited as a reason for non-administration (χ^2 =12.53, d.f.=1,p=0.0004).

Table 5

Cited Reasons for Non-Administration of Thrombolytic Therapy

Cited Reason→	Unknown	Too Late	ECG Ambiguous	Contra-indications	Primary PTCA	NSTEMI
Female Patients (n=181)*	12%	40%	21%	9%	10%	25%
Male Patients (n=350)*	11%	25%	25%	10%	16%	29%
Gender effect P=	0.4429	0.0004	0.9013	0.8773	0.3947	0.8835
Chi Square	0.59	12.53	0.02	0.02	0.72	0.02

*NB: More than one reason cited for some patients

The ***'1st medical assessment to needle (thrombolysis)'*** timeframe was calculated from the time of first medical contact to the recorded administration time of the drug. Included in this time-period was the medical assessment, diagnosis and decision to thrombolyse, as well as the preparation of the thrombolytic agent. The median *'1st medical assessment to needle (thrombolysis)'* timeframe for male patients was 30 (IR: 15 to 75) minutes, with a greater yet non-significant delay experienced by female patients 45 (IR: 24 to 90) minutes (χ^2 = 3.26, df=1, p>0.050, Kruskal Wallis).

Women also waited significantly longer for thrombolysis, with a median ***'door to needle'*** timeframe of 70 (IR: 40 to 135) minutes recorded for women in comparison to 52 (IR: 26 to 107) minutes recorded for men (χ^2 = 5.43, df=1, p=0.020, Kruskal Wallis); however, this gender effect disappeared when controlling for other variables. The 'door to needle' timeframe was calculated from the time of registration in A&E to the recorded administration time of the drug. Men were more likely than women to receive their treatment within the recommended 30-minute timeframe (29% versus 17%), adjusted odds ratio 2.96 (1.31, 6.69). This gender effect was significant when controlling for other variables such as age, referral source, insurance status, time of day and admitting hospital.

Primary PTCA: In the Dublin MATHS 2001/2 MI Census, 9.5% (n=85) of the total population received primary PTCA as an alternative to, or in conjunction with, thrombolytic therapy. Similar percentages of women and men received this treatment, (8% versus 10%); however, greater ***'door to PTCA'*** delays were experienced by women at 2 hours 24 minutes (IR: 1 hour 42 minutes to 3 hours 6 minutes) than by men at 1hr 48 minutes (IR: 1 hour to 3 hours 24 minutes) (χ^2 = 4.22, df=1, p<0.040, Kruskal Wallis). The *'door to PTCA'* timeframe was calculated from registration in A&E to the commencement of the procedure; however, this gender effect disappeared after adjusting for other variables such as age, admitting hospital and time of day.

5.3.4. Transfer Timeframes

The *'door to CCU'* was calculated from registration in A&E to the time of admission to CCU. The median 'door to CCU' timeframe was significantly different between the genders, with women at 3 hours 54 minutes (IR: 2 hours 18 minutes - 6 hours 45 minutes) in comparison to their male counterparts at 3 hours (IR: 1 hour 30 minutes – 5 hours) (χ^2 = 16.42, df=1, p<0.0001, Kruskal Wallis). This gender effect was still significant following multivariate analysis. (Table 6 summarises the effect of gender on delays to treatment). Significance levels were calculated using a Mann-Whitney rank sum test. The test-statistic is a Kruskal-Wallis chi-square (one degree of freedom).

Table 6

Effect of Gender on Delays to Treatment

Gender→ Timeframes ↓	Female median (Q1-Q3)	Male median (Q1-Q3)	Gender Difference Median 95%CI	Gender Effects: p values	TEST Result Kruskal-Wallis Chi-square
Door to Triage (minutes)	7(3,15)	6(1,14)	1(-1,3)	0.055	3.68
Triage to 1st Medical Assessment (minutes)	19(3,60)	10(2,32)	9(1,17)	0.002	9.55
Door to 1st Medical Assessment (minutes)	30(12,74)	20(9,48)	10(3,17)	<0.0001	15.14
1st Medical Assessment to Thrombolysis (minutes)	45(24,90)	30(15,75)	15(-1,27)	0.071	3.26
Door to Aspirin (minutes)	50(25,152)	31(15,90)	22(7,37)	0.020	5.41
Door to needle (minutes)*	70(40,135)	52(26,107)	18(0,35)	0.020*	5.43
Door to PTCA (hours & minutes)	2hrs & 24mins (1:42,3:06)	1hr & 48mins (1,3:24)	36	0.040**	4.22
Door to CCU (hours & minutes)	3hrs & 54mins (2:18,6:45)	3hrs (1:30,5:00)	54 (26,86)	<0.0001	16.42

*Gender effect disappears when controlling for other variables **CI not calculated due to small sample size

5.3.5 Conclusion:

The results outlined above demonstrate that differences exist in the pre-hospital and in-hospital timeframes for women and men with myocardial infarction. Women have significantly longer 'initial symptom onset to A&E' and 'intense symptom onset to A&E' delays than their male counterparts. In addition, women are more likely to face significantly greater delays than men when receiving medical assessment, medical treatment and a bed in CCU. Mortality outcomes have not been analysed in this study, however, the clinical importance of these results, in relation to survival potential cannot be understated. At best, the results reflect a more expedient pathway of care for males with MI than that received by females and as such are indicative of biased care. At worst, these results show that the delayed care received by Irish women with MI, within the Dublin MATHS, may greatly limit their opportunities to survive this condition. The following discussion critically outlines the implications of these results for women's survival opportunities in light of other international supporting literature.

5.4. DISCUSSION

The following discussion of findings is divided into two sections: (1) pre-hospital care pathway timeframes and (2) in-hospital care pathway timeframes. Where applicable, the discussion is

punctuated by excerpts from the field-journal (see appendix IX and main body of text) that were recorded following the conversations between the patient and I during the consent procedure. However, it is important that the limitations of the Dublin MATHS 2001/2 MI Census are firstly acknowledged and the findings then discussed in light of such limiting factors.

5.4.1. Limitations

- The cohort of patients only included patients who were admitted to Coronary Care via the A&E department of each hospital. It therefore excluded patients who died on arrival to A&E or those who were misdiagnosed and sent to medical wards. Hence, the findings of this study pertain to a select number of patients who were diagnosed correctly and survived to Coronary Care. As women are less likely than men to be admitted to Coronary Care (Adams et al 1995, Bergelson & Tommaso 1995) and more likely to experience symptom misdiagnosis (Kannel & Abbott 1987, Herlitz et al 1999), the inclusion criteria imposed in this study exclude a potentially important and frequently under researched group of MI patients.

- The study population is also limited to those patients who attended the six Dublin MATHS and so national or urban/rural comparisons are not possible within this study.

- Throughout the course of the Census, I was aware of 9 patients whose inclusion into the Census was missed (see page 86). It is also possible, that some other patients that I was not aware of, may have been missed. Furthermore, during the course of the Census, 37 eligible patients died prior to the consent procedure and 5 eligible patients declined to partake in the study. In total, I am aware that 51 eligible patients were not included in the Census for a variety of reasons and so the Census population could not be considered a complete one. However, as I estimate to have approximately 96% of the total population, I consider the cohort to be a representative sample of the population of patients who met with the imposed inclusion criteria.

- Although the Census form aimed to measure the timeframes to treatment, it was impossible to ensure the total accuracy of recorded entries, due to the presence of the 'human factor'. Although every effort was made to reduce the possibility of random error, 'human error' remained a constant and potential threat to validity and reliability of study findings.

- Although postal code was included in the data collection items, the analysis of this item was deemed impractical (see page 82).

- Some recorded entries were estimated timeframes and supported where possible by collateral clinical information and verbal reports by patients. However, when supporting information was not available, some entries were left blank.

- The presence of a larger research team may have ensured the quality proofing of documented A&E records as well as those in CCU. The limitations imposed by a sole researcher meant that additional quality proofing of A&E records was unfeasible. Additional quality proofing may also have enabled the documentation of additional data such as the timing of initial and subsequent ECG recordings. These extra timeframes may have provided further insights into clinical decision-making processes.

- The findings do not describe the reasons for assessment or treatment delays, but rather present factual yet unexplained accounts of in-hospital timeframes. Although I accept that certain MI presentations are more difficult to assess and that practical every day resource and funding issues may exacerbate treatment and decision making delays, the findings do not permit any conclusions to be drawn about these issues

- Finally, this study did not examine the association of delay with mortality or morbidity outcomes and so the adverse effects of treatment delays can only be speculated upon in light of other research findings.

5.4.2. Discussion of Pre-Hospital Care Pathway Timeframes

Calculating timeframes from 'symptom onset' to hospital admission was considered a complex issue and dependent not only on the individual's subjective experience and labelling of symptoms, but also on the interviewing skills of the data collector. In an attempt to pinpoint as accurately as possible the onset of symptoms and to add clarity to pre-hospital delay times, the two median timeframes concerning the pre-hospital period were calculated independently and included 'Initial symptom onset to A&E' and 'Intense symptom onset to A&E'. Hence, both prodromal and intense periods of the pre-hospital myocardial infarction experience were allowed to emerge.

Gender-Specific Pre-Hospital Delays: When clarifying the 'initial symptom onset to A&E', patients were asked the question 'In relation to this admission, when did you start feeling unwell?' For women, the median 'initial symptom onset to A&E' timeframe of 14 hours was remarkable and requires further in-depth examination. However, in the absence of additional exploratory data, tentative suggestions for this delay may include a longer prodromal period for women, or a greater awareness by women of subtle bodily changes. It may also reflect gender socialisation, where societal norms may enable women to verbalise these minor non-specific complaints to another woman, yet male patients may feel inhibited. However, both clinical and epidemiological studies have suggested that many MI patients experience

premonitory or prodromal symptoms during days or weeks before the acute onset of the condition (Solomon et al 1969, Moss & Goldstein 1970, Alonzo et al 1975, Kuller 1978, Hofgren 1995, Mc Sweeney et al 2003). These may range from symptoms such as dyspnoea, increasing angina attacks, palpitations, diaphoresis, as well as psychological prodromes such as feelings of fatigue, weakness and depression. In the present study, many patients reported a feeling of general malaise, fatigue, palpitations, dyspnoea and increasing angina episodes, during the days leading to their hospital admission and this was particularly noticeable amongst female patients. Similarly, Hofgren (1995), examining prodromal symptoms in sub-sets of MI patients, reported longer prodromal symptoms for women with MI than men, with some lasting longer than 1 week. The previously mentioned studies by Mc Sweeney et al (1998, 2003) also support the current findings of pronounced prodromal symptoms in female patients (see page 25).

However, the clinical and practical application of this 'prodromal symptom' information is unclear. Although highlighting the presence of possible warning symptoms prior to MI and suggesting that women may have a longer lead-in time to the acute event than their male counterparts, its usefulness is untested. As many 'prodromal symptoms' are non-specific and likely to occur in non-cardiac patients, placing greater attention on these symptoms as a precursor to acute myocardial infarction, would appear unfeasible yet warrants further investigation. Nonetheless, what it undoubtedly highlights is a need for further examination of gender-specific symptomology in acute myocardial infarction. It also provides further irrefutable evidence of how the male normative frame, so heralded by biomedical research, is inherently flawed. The gendered image parameters exalted by biomedicine excludes the presence of a prodromal symptom onset and as such denies or dismisses their existence as insignificant to the MI condition.

However, in the present study, women were also more likely to have longer 'intense symptom onset to A&E' timeframes than their male counterparts. The findings of greater pre-hospital delays in women are supported by other international studies (Clarke et al 1994, Magid et al 1997, Brophy et al 1998, Foster & Mallick et al 1998, Canto et al 2000, Sheifer et al 2000); however, others have found no significant gender effect (Kundenchuck et al 1996, Dracup & Moser 1997, Goff et al 1999, Goldberg et al 2000). Many reasons put forward to explain identified delay behaviour by women, include a popular societal misconception that heart disease is predominantly a 'male' disease, with women unlikely to view themselves as possible MI victims (Foster & Mallick 1998, Meischke et al 1999). Subsequently, women have difficulties labelling their symptoms (Dempsey et al 1995, Goldberg 2000), whilst health care professionals have difficulties attributing their symptoms to a cardiac origin (Arslanian-Engoren 2000). Other factors that may contribute to greater delays in women than men include advancing age, increased burden of co-morbidity, symptom presentation, social support and insurance status (Lefler & Bondy 2003). As a consequence of help-seeking

delays, women are unlikely to avail of optimum myocardial salvaging treatment and are thus exposing themselves to greater potential complications of myocardial infarction. Strategies to improve pre-hospital delays for both women and men are urgently needed and likely to save lives. However, a specific examination of delays experienced by women may also inform educational and policy initiatives and allow for gender mainstreaming within these areas.

Age-Specific Pre-Hospital Delays*:* Age-specific delays were also evident in the 2001/2 MI Census and this association between elderly patients and help-seeking delay is supported by various population studies, as well as large randomised trials of MI patients (Turi et al 1986, Weaver et al 1991, Yarzebski et al 1994, Gurwitz et al 1996). Several factors may explain age-specific delays insofar as older patients are more likely to have 'atypical' symptoms and experience heavy burdens of co-morbidity, e.g. diabetes, than their younger counterparts (Kannel & Abbott 1984). As the risk of dying from an MI dramatically increases with age (Udvarhelyi et al 1992, Maggioni et al 1993), a further examination of age-specific delays from an Irish perspective is urgently required. Reducing pre-hospital delays in the elderly population may go some way towards reducing the poor outcome witnessed in older patients with acute MI.

Referral Source: Approximately 36% of patients in the study were referred by their GP, whilst the remaining 64% self-referred. As with other international studies (Rawles & Haites 1988, Gurwitz et al 1992, Rowley et al 1992, Johnson & King 1995), GP referrals in the 2001/2 Census were more likely to experience longer pre-hospital delays than those who self-referred. With the GP as first point of contact for 36% of patients it suggests that, for some MI patients, the initiation of treatment in this pre-hospital 'window' may be beneficial. GP/paramedic-led pre-hospital thrombolysis has been utilised with much success elsewhere (The European Myocardial Infarction Project Group 1993, Rawles 1994, Rozenam et al 1995) and its potential, which includes retraining of GPs, warrants further investigation. In the interim, educational initiatives directed towards MI patients and their help-seeking behaviour, must stress the importance of immediate A&E attendance without initial GP referral. It is acknowledged, however, that these findings pertain only to those patients attending the Dublin MATHS and that rural pre-hospital delays may yield different results.

The 2001/2 Census also highlights how a greater and statistically significant number of female patients (50%) were referred to A&E by their GP in comparison to their male counterparts (30%) whilst GP referral was also associated with older age-groups. These findings are supported by other comparative studies, suggesting that an international trend exists where women and older people with myocardial infarction are more likely than others to seek initial assistance from their GP (Ho 1991, Dracup et al 1995, Leslie et al 2000). The association of pre-hospital delays and GP referral may go some way in explaining the lengthy pre-hospital delays experienced by women and the elderly. To gain a more complete picture,

future comparative studies may wish to examine GP waiting and response times in both Dublin and rural practices.

Admission Route: Women and men had similar rates of ambulance usage; however, men were more likely than women to drive themselves into hospital, whilst more women than men were car passengers. Many patients who opted not to use an ambulance reported feelings such as 'I'd feel really embarrassed to go in an ambulance,' 'I thought it would be needed for more urgent cases,' and 'I didn't want to waste their time when it could be used for someone else.' Driving oneself into hospital may be considered hazardous when experiencing a myocardial infarction, but many patients suggested that, 'it was the quickest way in.' Patients frequently reported that they felt well enough to make the journey and would have 'pulled over' if they had become unwell (excerpts taken from field journal).

However, many of these patients also reported a feeling of 'collapse' when arriving at their destination. Driving a car whilst experiencing a myocardial infarction is obviously extremely dangerous, both for the patient and the general public. However, waiting for a family member or friend to provide a chauffeured admission route may result in unnecessary delays. Therefore, any educational initiatives regarding admission route to hospital during an acute cardiac event, must encourage the use of ambulance services above all other admission routes. This route is likely to reduce pre-hospital delays and will save lives. For a more comprehensive picture, future comparative studies may wish to examine ambulance response times.

Insurance Status: Although only providing a tenuous link, an insight into socio-economic status was obtained through recording the insurance status of each patient. This link tentatively raised the possibility that the possession of private health insurance may have indicated greater wealth than the possession of no insurance. A sociological trend was observed in the pre-hospital arena, insofar as those patients with private health insurance were most likely to experience shorter pre-hospital delays whilst those with medical cards only were associated with longer delays. Whilst male patients and those younger than 65 years were most likely to possess private health insurance, female patients and those older than 64 years were most likely to have medical cards. No other Irish study has reported a link between pre-hospital delays and health insurance status and so further investigation into this area is warranted. In the absence of comparative data, only tentative suggestions for this trend may be put forward. If indeed health insurance status can be linked to wealth, then this pre-hospital trend may describe a greater awareness of emergency help-seeking behaviour by those patients with private health insurance i.e. increased wealth.

5.4.3. Discussion of In-Hospital Care Pathway Timeframes

A&E Timeframes: Although 'door to triage' timeframes were similar for women and men, (7 and 6 minutes respectively), this delay represents approximately 20-25% of the allocated 30-minutes 'door to needle' target. It is considered wasted time, most likely expended in the A&E waiting area and represents a major delay in the A&E pathway of care for both sexes. If 'time is muscle,' then this median loss of 6-7 minutes constitutes an intolerable delay to myocardial-salvaging opportunities. The 'triage to 1st medical assessment' median timeframe of 10 minutes for men and 19 minutes for women highlights additional delays to thrombolysis, especially for women. Although 10 minutes may seem an appropriate time to perform a nursing assessment, obtain/interpret an ECG and alert medical staff of the situation, the same triage procedure took almost twice as long with female patients. Tentative suggestions for triage delays in women may include the difficulties associated with atypical presentation reported so frequently of this group (Herlitz et al 1999, Arslanian-Engoren 2000, Lockyer & Bury 2002). Women experiencing MI may not exhibit the classic symptoms described by Braunwald et al (1980) and hence do not parallel those symptoms typically associated with male patients (Jensen & King 1997, Moser 1997). Triage nurses may therefore experience difficulties assessing the patient with atypical symptoms or may demonstrate greater caution in delivering possible false-positive MI diagnoses to this group.

Gender and age biases may also influence the early triage and decision-making processes in women with MI. If nurses evaluate symptoms based on the typical cardiac patient then, as demonstrated in the study by Arslanian-Engoren (2000), MI may not be the first diagnosis considered by triage nurses for young or middle-aged women (see page 35). Arslanian-Engoren (2000) suggests that knowledge derived from studying the progression and presentation of coronary artery disease in women is necessary to inform clinical decision-making in the triage environment and correct the distorted gendering of this disease. To this end, she asserts that a gender-sensitive approach to any clinical or academic preparation of A&E nurses must be adopted, to optimise the quality of health care delivery.

The 'door to 1st medical assessment' timeframe represented a cumulative yet protracted delay along the A&E pathway of MI care for women. The cumulative effect of long 'door to triage' and 'triage to 1st medical assessment' timeframes resulted in long delays to medical assessment. Once again, women were more likely to experience greatest delays to first medical contact than their male counterparts (30 minutes versus 20 minutes). Further gender specific delays were evident in the '1st medical assessment to thrombolysis' timeframe, where the medical assessment of women for thrombolysis took a median of 45 minutes compared to 30 minutes for men. The clinical significance of these particular delays is worth noting. Although recommendation R8.4 of the Cardiovascular Health Strategy (Department of Health & Children 1999), advocates a door to needle time of 30 minutes, it would seem that

approximately half of the female sub-population had not obtained even their first medical contact within this time-period (Table 6). Then, having eventually experienced their first medical contact, women were further subjected to even longer assessment and decision-making processes for thrombolysis, than their male counterparts.

Although drug preparation may have contributed to this delay, the assessment timeframe for thrombolysis in women and men (45 versus 30 minutes) seems inordinately long, especially as Brophy et al (1998) reported median medical MI assessment times of 12 minutes. Brophy et al (1998) also found that women were more likely to experience delays to medical assessment than their male counterparts and suggested that difficulties in diagnoses may have contributed to these delays also. Considering that women's pre-hospital delay behaviour may potentially limit their opportunity to avail of the maximum benefits of thrombolysis (Goldberg et al 1993, Maynard et al 1995, Newby et al 1996, Magid et al 1997, Gurwitz et al 1997, Foster & Mallick 1998, Leslie et al 2000), the further confounding of this issue by in-hospital gender-specific assessment delays seems unacceptable.

Thrombolysis: The finding of a lower rate of thrombolytic administration in women, compared to men is supported by some international studies (Clarke et al 1994, Kudenchuk et al 1996, Brophy et al 1998, Chandra et al 1998); however, others have found no significant gender-difference (Weaver et al 1996, Woodfield et al 1997, Marrugat et al 1998). In the current study, although women received thrombolysis less frequently than men, the effect of age and admitting hospital were greater than the effect of gender. The reasons for non-administration of thrombolysis, however, are worth noting. As 'too late' accounted for 40% of cited reasons for non-thrombolytic administration in women compared with only 25% in men (Table 5), any cumulative care-pathway delays experienced by this group must be considered an important issue in determining opportunity and suitability for thrombolysis.

Although men received thrombolysis sooner than their female counterparts (52 minutes versus 70 minutes), this gender effect just loses significance ($p=0.0598$) when controlling for the effect of age. However, women were significantly less likely than men to receive their treatment within the 30 minute recommended door to needle time, a particularly alarming finding, especially when considering the greater survival advantage of receiving earlier treatment. Delayed thrombolytic administration can result in reduced therapeutic benefits and may go some way to explain the poorer prognosis associated with women hospitalised for MI (Kannel & Abbott 1987, GISSI 1987, Tofler et al 1987, Becker et al 1994, White et al 1996, Vaccarino et al 1999). However, the 2001/2 MI Census report did not extend its examination of 'door to needle' timeframes to include reasons for treatment delay and so information pertaining to difficulties with clinical decision making is unavailable. Future comparative studies may examine this issue in more depth and provide additional data to complete thrombolytic treatment scenarios. Moreover, as the 'door to needle' times for both sexes are

far greater than the recommended 30 minute target, it is imperative that practice development initiatives are directed towards the reduction of this timeframe.

Aspirin & Primary PTCA: No gender differences were seen in the rate of Aspirin administration or performance of PTCA amongst the 2001/2 population yet women waited longer than men for both of these treatments. It is unclear why gender-specific delays occurred here; however, as no other reviewed study has reported on these particular timeframes, comparative analysis is not possible at this time. The percentage of patients receiving Aspirin in the six Dublin MATHS (94%) is lower than the average European rate of 96% reported in the ENACT study (Fox et al 2000) and the combined Irish/UK rate of 96% (n=639).

The recorded site for Aspirin administration was predominantly A&E (82%), with some documentation of ambulance administration (3%). Administration of Aspirin by ambulance crews is presently being piloted in some Dublin hospitals and is likely to result in higher rates of documented ambulance administration rates when this practice is fully established. However, the sub-group analysis by referral source, suggests that less than 14% of patients referred by their GP were administered Aspirin by the GP This result is remarkable, given that the evidence in favour of Aspirin administration is now considered common knowledge, with benefits of early administration reflected in significant reduction in MI deaths. To this end, the Anti-Platelet Trialist Collaboration Group (1994) recommend that Aspirin be given to *all* patients with suspected myocardial infarction, unless contra-indications for this drug are present.

However, the 2001/2 Census result highlights an apparent under-usage of Aspirin by GPs, a finding that is supported by O'Shea (2001). In his study, O'Shea examined Aspirin administration by GPs in subsets of patients residing in the West of Ireland. O'Shea (2001) reported that less than 10% (N=76) of patients with symptoms of acute myocardial ischaemia, were administered Aspirin by their GP and only 65% (N=32) of GPs stated that they carried Aspirin in their medical bags. In the absence of further explanatory data, these findings suggest that this apparent under-usage of Aspirin by GPs is inappropriate and in urgent need of review.

Door to CCU: Gender-specific delays were evident on transfer from A&E to CCU, with women waiting almost 1 hour longer for a bed than their male counterparts (3 hours 54 minutes, versus 3 hours). Although many comparative studies comment on the reduced likelihood for women to be admitted to CCU (Heston et al 1992, Clarke et al 1994, Adams et al 1995, Bergelson & Tommaso 1995), no other reviewed study has reported delays in accessing a CCU bed. Despite this lack of comparative analysis, the guidelines provided by the task force for the European Society for Cardiology (1998) suggest that patients should be

moved from the emergency department to CCU within 20 minutes of arrival to hospital, unless initiation of thrombolysis or other emergency procedures are delayed as a result. Therefore, even in the presence of high A&E thrombolytic rates, these median 'door to CCU' time frames for both women and men must be considered unacceptable for any critically ill patient to endure.

5.5. Conclusion

Despite the obvious limitations to this study, the results of the Dublin MATHS 2001/2 MI Census contribute new and important contextual findings to the international body of knowledge relating to gender and MI.

- This is the first study undertaken in an Irish context examining specifically the issue of gender and MI. It demonstrates that Irish women delay accessing care longer than their male counterparts. In addition, having eventually reached A&E, they are faced with protracted delays to assessment, treatment and receipt of a CCU bed. It demonstrates that on an international stage, Irish women are treated similarly to their counterparts in other countries, possibly reflecting a global gender-bias in MI care.

- This study, unlike other comparative studies, has incorporated two pre-hospital time-frames 'initial-symptom onset to A&E' and 'intense-symptom onset to A&E'. As such, it has provided insights to pre-hospital behaviour.

- Although in-hospital delays have been examined in previous studies, the Dublin MATHS 2001/2 MI Census offered new information related to specific A&E time-frames – e.g. 'door to triage', triage to 1st medical assessment' and 'door to 1st medical assessment'. As such, this study provides insights into decision-making time-frames in emergency care.

- The study contributes important information to the national and international audits of 'door to needle' times. Although reported elsewhere, this is the first Irish documentation of 'door to needle' times from both A&E and CCU perspectives.

- This study is the longest MI census ever carried out in Ireland and the biggest study of confirmed MI patients in the MATHS (N=890). As well as highlighting gender differences in MI care, this study provides practitioners with a unique and current snapshot of care delivered in this time-period and within the MATHS care catchment.

- In addition, this study provides Irish nurses and doctors with an insight into gender-specific treatment and assessment differences in MI care. It highlights the possibility of gender and age bias within practice and indicates areas of improvement potential.

- Finally, this study highlights the need for gender-sensitive health policies & practice and demands that the use of male normative frames of reference in the care of women with MI, be abandoned.

It is impossible to say whether the gendering of MI adversely affected women's ability to receive equitable cardiac health opportunities; however, in the absence of explanatory data, I believe that the male-image of the MI victim may possibly have contributed to pre-hospital delays and in addition may have led to triage and medical assessment difficulties. Although gender was an important variable influencing pre-hospital delays, so too was age and help-seeking behaviour. If age and gender are considered non-modifiable factors, then future educational initiatives must emphasise the importance of ambulance usage and early, self-referral to A&E departments. However, if pre-hospital behaviour is considered gendered and possibly modifiable, then future research must also examine the help-seeking behaviours of Irish women with myocardial infarction.

To this end, the qualitative inquiry that follows examines the pre-hospital behaviour of women with MI. It is clear from the findings presented here, that as a result of their pre-hospital behaviour, women potentially limited their chances to survive an MI. I considered therefore, that only by truly understanding the reality of the illness experience in women, might appropriate educational initiatives and pre-hospital advice be directed towards this group. I also acknowledged that having delayed in reaching hospital, their in-hospital assessment times were also protracted. Although it is not within the limits of this study to examine the clinical decision-making processes of A&E staff members also, the urgency of future inquiry into this area of care is appreciated. However, as cardiac nursing and medical practice is predominantly based on research performed on men (see section 2.3.1), I believe that validating women's pre-hospital experience of this condition as a legitimate form of knowledge, may in itself inform future clinical practice and expedite the assessment/treatment practices for Irish women with MI.

Chapter 6

Strand 2 - Methods

6.1. Introduction

In this chapter the qualitative research question is explicated and the data collection method outlined. The use of the face-to-face in-depth interview was my chosen data-collection method and I describe how the findings from the 'field-journal' informed this process. The use of story-related memos to guide additional qualitative inquiry maximised participant involvement and as such was consistent with the power-sharing principles of feminist research. Also included in this chapter are the ethical issues that I considered important in safeguarding the well being of study participants and I demonstrate how the use of feminist principles enhanced these efforts. The need to demonstrate research credibility was considered a major concern for this study and techniques to establish credibility from the outset included issues associated with truth-value, auditability, representation and fittingness. These four issues were recognised as appropriate to feminist inquiry and all contributed to the probability of a high transfer value. As with the quantitative strand the use of a reflective diary was incorporated into the research design and allowed me to establish continuously and effectively how my social and professional position may have impacted on and contributed to the research experience.

6.2. Research Question

What reasons might exist for the pre-hospital delays experienced by women with MI?

6.2.2. Research Aim

To explore the pre-hospital experience of acute myocardial infarction from the shared world-views of female participants.

6.3. Selection of Participants

All participants were women and selected from within the six Dublin MATHS Coronary Care Units. Eligibility included:

(1) Confirmed diagnosis of MI, which had been substantiated by a cardiologist and based on clinical presentation, in ECG changes showing evidence of MI and raised cardiac enzymes.
(2) Admitted to CCU via the A&E department.
(3) Physiologically stable, as determined by coronary care nursing staff.
(4) Ability to communicate adequately in English.

Eighteen women initially agreed to partake in the study; however, only twelve of this group subsequently signed a consent form (see page 113). The final group of 12 participants who met the eligibility criteria were admitted to Coronary Care during the months of September to

December 2003. These participants were chosen purposively and were therefore the first 12 women who met all inclusion criteria and consented to partake in the study.

Consequently, by chance, the twelve women participating in the study emanated from only four of the six major academic teaching hospitals. Five women had a previous history of myocardial infarction, whilst for the remaining seven this was their first cardiac admission to hospital. The mean age of the twelve women was 68 (SD=11) years, which is similar to that recorded in the Dublin MATHS 2001/2 MI Census of 69 (SD=12) years. Four women had private health insurance, five were public patients (non-medical card holders) whilst three were medical card holders (means-tested benefit). Six women were referred by their GP and six women arrived to hospital by ambulance. Their median 'initial symptom onset to A&E' timeframe was 34 hours (IR 4 hours-72 hours), which was greater than that recorded in the Dublin MATHS 2001/2 MI Census at 14 hours (IR: 2.8 to 50 hours). The median 'intense symptom onset to A&E' time-frame was 2 hours (range 1 -5 hours), which is less than that recorded in the Dublin MATHS 2001/2 MI Census at 2.8 hours (IR: 1.3 to 10.5 hours), but the huge variation in sample sizes (N=12 versus N=277) may explain these differences.

6.4. Data Collection Methods

A sequential within-method triangulation approach to qualitative data collection was employed to examine the pre-hospital experiences of women with MI. This included a large selection of journal entries that were recorded during the period of the MI Census and which subsequently informed the in-depth interviews of the qualitative strand (see appendix IX). As well as the benefits attributed to this approach (see section 3.6.1), the triangulation of qualitative data in this way served to enhance the truthfulness and confirmability of the research findings. As one set of qualitative data led to the development of a subsequent qualitative inquiry, this within-method approach was also consistent with feminist principles, as it maximised participant involvement and contributed to power sharing efforts. In effect, two separate data collection methods from almost two hundred patients in six institutions (i.e. 178 journal entries & 12 in-depth interviews) provided the inquiry with an abundance of rich contextual data.

6.4.1. The Field Journal

During the process of gaining consent from each of the participants involved in the MI Census, many participants invariably recounted their story to me. In confirming their pre-hospital timeframes, they described what had happened to them, how they initially labelled their experiences and how others had helped. I kept a field journal of my perceptions of their experiences from symptom onset to receipt of a CCU bed and with each consecutive consent procedure, I entered additional data. The analysis of the data from the field journal then became the guide for the qualitative inquiry. Therefore, rather than emanate solely from literature searching, the interview guide for the qualitative strand was informed by participants

in the quantitative strand. In so doing, the subsequent interviews that were the central focus of the qualitative strand were designed for participants by participants.

6.4.2. The Interview

Although no specific feminist method of data collection has been identified, the in-depth interview has become the central qualitative method used in feminist research (Fonow & Cook 1991, Reinharz 1992). In the 1970s, feminist social scientists began to analyse the 'gynopia' (Reinharz 1985) – the inability to see women - in the realms of traditional science, medicine and conventional social structures. 'Interviewing' as a research method played a central role in exposing and redressing women's invisibility as social actors. As mentioned previously (see section 3.6), other qualitative methods have since been employed by feminist researchers and include oral life histories, ethnographic accounts and discourse analysis; however, none is distinctly feminist.

The in-depth interview was chosen as the primary data collection method as I considered that by providing the participant with freedom to tell her story, the interview would allow me to capture the realities of her life within its social context. Interviewing therefore offered insights into women's thoughts, feelings, beliefs, attitudes and values, described in their own words and from their unique and individual social positions. This insightful process was extremely important for the study of women's health, as learning about women's health and illness experiences from their own world view was considered an antidote to centuries of having their concerns ignored or dismissed, or having men speak for them. Patton (1990) adds that interviewing is an extremely effective way of obtaining a glimpse, however brief, into these other worlds.

By selecting a semi-structured format, I had freedom to delve a little further into aspects of stories, which I considered important to the research aim. This type of interviewing facilitated spontaneous exchanges together with the possibilities of freedom and flexibility for both participants and me. Engaging in the feminist debate about the value and practice of the interview method, Kasper (1994) believes that the semi-structured or unstructured interview allows women to become active participants in the research process. She adds that only by listening to what women have to say, can the essential meanings of women's lives be grasped. In contrast, I felt that the structured interview might have served to confine understanding within imposed restrictions, resulting in the loss of the personal within the process. A pilot interview was performed with one eligible participant admitted to CCU, in order to refine the interview guide, whilst discovering any additional events, keywords and processes that might have enhanced the interview experience for both researcher and participant. The information from this participant was consistent with that of subsequent interviews and the data were therefore included in the final analysis.

6.5. Ethical Issues

Approval to conduct the qualitative strand of the study was received from the Ethics Committees, Directors of Nursing, Consultant Cardiologists and CCU Nursing Managers in each of the participating hospitals (see appendix XI). The principle based ethical framework as outlined in the quantitative strand (see section 4.6), was also adopted for the qualitative strand. Its universally recognised principles of beneficence, respect for autonomy and justice were considered crucial to the protection of human rights and were therefore supported and endorsed by the feminist principles of emancipation, power sharing and representation.

6.5.1. Beneficence & Emancipation

It is hoped that all research will eventually 'do good' and enhance the lives of those who participated in its execution. However, it is also recognised that for many participants of research studies, personal benefit may not immediately follow this experience, but may be reaped in research findings that contribute to the 'general good'. Although it was difficult to ensure that individuals personally benefited from participation in the Dublin MATHS 2001/2 MI Census, it was acknowledged that within the qualitative strand what constituted as 'beneficence' was more straight forward. Within the qualitative design, I considered that the process of interviewing was in itself potentially emancipatory, as the lived experiences of participants were respected as legitimate knowledge sources. Interviews therefore gave voice to participants' world-view of MI and these accounts were actively listened to and recorded. By implying 'I want to hear what you have to say,' and 'what you say is important,' Holstein & Gubrium (2003) suggest that the interviewer may create a very new social experience for many women. Whether socially or medically imposed as a tool of subordination, or self-imposed as a strategy of resistance (Aisenberg 1994), the silence of women's voices was considered disempowering. Through interviewing, I anticipated that the female participant might discover her thoughts, learn who she is and 'find her voice' (Holstein & Gubrium 2003) and as such, this research approach was deemed to 'do good'.

As well as obtaining possible benefits from individual interviews, consideration was given to the wider implications and 'good' that the study findings may have had on the cardiac health of the participant and other women. A strategy to disseminate findings was incorporated into the study design, which included returning a summary of findings to the participant (see appendix XII), the presentation of summary findings to each of the 6 institutions (see appendix VI) and the publishing of findings in national and international nursing and medical journals (see appendix XIII). In this way, I accepted the ethical responsibility to disseminate findings in such a way that would benefit or influence the wider political, social and institutional determinants of women's cardiac health.

6.5.2. Non-maleficence & Representation

Although I considered the interview experience and its subsequent findings to be potentially emancipatory and therefore 'good for others', I also recognised that participants who were unaccustomed to being heard, may have found the situation a little unnerving. I was also aware that for some women, 'reliving' the experience of their life-threatening event through the interview, may have been emotionally upsetting. Therefore, in order to support these participants following their interview, I recruited the assistance of the CCU staff and cardiac rehabilitation teams in each of the hospitals. Following interviews, I asked each participant if she had any questions that she wished to ask of me and answered each as best I could. For those I was unable to answer, I referred the participant to the CCU staff and/or cardiac rehabilitation team. This approach to minimising the possibility of 'doing harm', was incorporated into the research study as a support mechanism for participants (see appendix XIV). I also inquired about the interview experience itself and for many participants this experience seemed at worst unremarkable and at best positive.

> Breda (pseudonym): I suppose it gave me something to do. Makes a change from sitting inside (on the ward) all day.

> Annie(pseudonym): Yeah, it was very interesting darling. It made me think about things I never thought of before. I hope it helps you out.

Although no participant appeared outwardly upset, as a matter of routine each participant was provided with my contact details and encouraged to contact me again if there were any additional questions they wished to ask. I also promised that I would phone them at a later stage, to inquire how they were coping at home. Each cardiac unit manager and rehabilitation team was also informed when the interviews had taken place and as part of their support arrangement, each participant was 'visited' by the unit manager or cardiac rehabilitation nurse prior to discharge.

In addition to noting the potential for upsetting the participant and as such 'causing harm', I also recognised that any misrepresentation of participants' words and meanings may do harm and cause injustice. I was concerned that my own age, gender, race, socio-economic status, accent, deportment and professional nursing/academic background may affect not only the power balance during interview, but also my interpretation of findings. I recognised that these very qualities would heavily influence the interview experience, by the types of questions I chose to ask, the meaning I assigned to words and how I eventually represented participants' stories. With all these concerns in mind, I chose to keep a reflective diary of my experiences within the research partnership (see main body of text), with a particular sensitivity towards how my very presence and social position influenced study outcomes.

6.5.3. Respect for Autonomy

Downie & Calman's (1994) interpretation of autonomy as the right to give or refuse consent to whatever we do or is done to us by others was extended to the qualitative strand. To this end, each participant was approached by the researcher on day 2-5 following admission to CCU and invited to participate in the study. As well as a verbal description of the process, an information sheet was given to participants, which further outlined the study aims and objectives (see appendix XV). Time was given for information assimilation and only when I felt that participants were satisfied with my responses to their questions, were consent forms signed. Despite these efforts to inform participants adequately of the study, I was acutely aware that I was approaching a vulnerable group of patients, who had just experienced and survived a potentially life-threatening experience. I could never be certain, therefore, whether they were truly willing research partners, or whether their vulnerability as patients carried with it an obligation to participate.

Where possible and in an effort to respect autonomy and endorse the power sharing principles of feminist research, participants were given the choice of interview venue, i.e. in their homes following discharge or during their hospital admission. For the six potential participants who chose to be interviewed at home, I made an agreement to make contact with them towards the end of their first week at home. However, although initially enthusiastic to be included in the study, when contact was made again, all six participants felt that they were too exhausted and traumatised following their hospitalisation and declined to take part.

Excerpt from Reflective Diary:

> *I felt that all six women had truly appeared enthusiastic to partake in the study whilst in hospital, yet within a week of discharge they had changed their minds. Three different aspects concerned me. Firstly, I considered whether having an additional amount of thinking time allowed these women to make a more informed decision about their desire to participate in the study. If this is true then perhaps more time should be given to study participants. Secondly, I considered that in approaching participants who were not only physiologically but psychologically vulnerable, I may have inadvertently taken advantage of the power imbalance. I wondered if it is really ever ethically sound to involve participants who are ill. Thirdly, I considered the converse may also be true and that during their hospitalisation, patients may be supported physiologically and psychologically in a build-up to their day of discharge. During this time, with their confidence gaining, they may have felt safe and fully capable of informed decision-making. However, from the phone conversations with the 6 participants, many commented on their complete exhaustion and nervousness during their first week at home. I wondered whether in fact, in bringing patients to the peak of health by their day of discharge, are we setting them up for a huge*

fall when they go home and have to cope on their own. Are we truly preparing patients for discharge or are we merely abandoning them at discharge?

6.5.4. Privacy & Confidentiality

Interviews were of 35-55 minutes duration and took place in a private office or room adjacent to the participant's bedside. The room was made as comfortable as possible away from distractions and noise, whilst privacy was maintained by employing a 'Do not Disturb' sign on the office door. Participants were offered some refreshments and every effort was made to ensure a friendly and relaxed environment. Mobile phones were powered off and calls to the office phone (if present) were electronically re-directed. Prior to signing their consent form, each participant was assured that their contribution to the study would remain confidential and that any use of their 'words' either within the context of the thesis, or in any future publications, would be accompanied only by a pseudonym. They were further assured that any information obtained from the interviews, which may have potentially identified the participant, such as area of residence, attending hospital, GP name, would be removed.

6.5.5. Power Sharing

Despite the difficult and somewhat illusionary nature of power transfer and research partnerships (see section 3.5.1), I felt that I must wherever possible attempt to correct the balance of power during the study. Included in these attempts were efforts to build rapport by involving patients in the study design, data collection and interpretation. As well as enabling the participant to tell her story, other autonomy respecting strategies were incorporated during the interview process. Participants were informed that they could withdraw from the study at any time and were assured that a withdrawal would not affect their subsequent care. They were encouraged to ignore the presence of the tape-recorder and were directed to the 'stop' button if they wished to end the recording at any time. Following the recording, the tape was then dated and a 'pseudo-name' which each of the participant chose for herself, was assigned to the tape cover. By selecting their own pseudonym, I hoped to instil in the participants a sense of story ownership, which I further encouraged by promising to return to them their individual transcripts and a summary of study findings.

The interview always started with an open-ended question such as 'Can you tell me what happened to you before coming into hospital this time?' The participant was given time to recount her story without interruption, but encouraging probes were used at times if the response seemed incomplete. Only when the participant had told me her story in full, did I attempt to delve deeper into aspects of her narrative. I asked her to enlarge on contextual details embedded in her experiences, issues related to perceived personal risk, interpretation of symptoms and beliefs about MI. Although the interview guide helped direct questions to areas of importance to the study aims, the semi-structured format and use of mainly open-

ended questions ensured freedom and flexibility for both research partners. Each interview was audio-taped and I took field notes to provide me with additional information about my own thoughts and experiences during the interview, as well as the expressions and emphases of participants (see appendix XVI). Obtaining recorded narratives in this way was considered an extremely useful way of capturing a glimpse of women's world-views, but the use of technology did also serve to formalise and somewhat impede the whole experience.

Excerpt from Reflective Diary:

> *It always happens....everything seems to be going fine, we're both fairly relaxed and chatty; however, as soon as I turn the tape-recorder on, a different environment is created. The participant becomes a little tense and I immediately realise that I am back in control of events – I'm the one with most power. Although I've encouraged participants to stop the tape at any time that they may feel uncomfortable, I know that this is never going to happen. Then, as soon as the interview is complete and the tape recorder is off, they instantly relax and start chatting again. I wish sometimes, that I could record the conversations after the 'stop' button is depressed....the conversation seems so much more natural and so rich!*

I also attempted to minimise power imbalances through reciprocity, where I strived to give power back under the guise of knowledge transfer. Not only did I receive rich accounts of personal MI experiences, but I also provided information to questions that participants may have had. Some of these questions occurred during the 'taped' portion of the interview, whilst the majority happened once the recording had stopped (see appendix XVI). Questions posed were usually related to the immediate health concerns of participants and the likelihood of experiencing subsequent cardiac events. I received and answered many queries about medication, invasive procedures and the possibilities of returning to a 'normal life.' Although I knew that full collaboration was not feasible, nor an equal relationship possible, I considered that involving participants in this way may still have yielded emancipatory and empowering potential.

Excerpt from Reflective Diary:

> *It feels good being able to give something back.....they ask a lot of questions...I'm sure many of these questions have been answered already by CCU nurses..... perhaps it's a way of confirming and reinforcing information that has been given or perhaps it may be easier to ask these questions of someone who isn't in uniform! Either way, I'm really glad that I can help out!*

6.6. Data Analysis

Two separate analyses of data were performed and included the analysis of field journal entries recorded during the Dublin MATHS 2001/2 MI Census, followed by the analysis of in-depth interviews. Both sets of data were subjected to content analysis.

6.6.1. Field Journal Analysis (excerpts recorded during the Dublin MATHS 2001/2 MI Census)

The first month of data entries contained detailed memos of my perceptions of participants' recounted experiences (see appendix IX). Following one month of listening to stories and entering field notes, I began to see many commonalities emerge. The journal data were then subjected to (pen and paper) open-coding following which categories were freely generated until all field note entries were represented. The result was numerous categories (see appendix IX). For the second month of data entries, I decided to include my perceptions of participants' stories, but only recorded aspects of stories that were very different to those previously recorded. These were subsequently coded and additional categories assigned accordingly. The total list of categories was reviewed and further grouped into higher order themes (see appendix IX). From this point, I only entered field notes on patients that were different or unusual to those already recorded. Saturation of themes occurred by month two, with no additional category emerging following this time. In total, I documented memos from 178 patients during consent procedures and grouped them into the following recurring themes.

Stimulus:

Context of the event

Initial and ongoing symptoms

Presence of others

Interpretation:

Labelling of symptoms

Expected symptoms versus experienced symptoms

Perceived personal risk

Positive Female Role Models

Response:

Psychological factors/emotional response

Cognitive Response

Caring for others/responsibilities

Locus of control

Influence of laypersons

Reasons for choosing (1) referral source and (2) admission route

6.6.2. Interviews

Interview narratives were transcribed verbatim from the tape recordings by a research assistant, following which I read through all narratives and notes. My initial reading of interviews and associated journal entries, allowed me to become immersed in the data and reacquaint myself with the specifics of each of the individual interview experiences. Rogers (1951) suggests that only through immersion in our data can we begin to enter the life world and/or frame of reference of the participant. My second reading of transcripts allowed me to identify areas where my social position may have influenced the interview experience.

Excerpt from reflective diary

> *Have just read all transcripts for the second time and can now clearly see how my social position may have affected the interviews. I am acutely aware that my younger age brought forth many endearing expressions from participants such as 'darling' and 'chicken'. My status of student and researcher brought forward stories of grandchildren completing similar work and a general uninhibited wish to help out the young student. My professional nursing background meant that for some, the efforts of my nursing peers were continually applauded lest I went back with stories of my own. I also slipped into professional bad habits - when one participant described an extremely unpleasant sensation in her chest, I asked her how long the pain had lasted. Although she herself had not used the word pain, I substituted the word in place of the word sensation. On another occasion I used the word denial, when in fact the participant had never referred to it. Can't believe I fell into these traps...just shows how words can be misinterpreted and how professional background can influence the meaning assigned to those words...once a nurse always a nurse!.*

The transcribed interviews were then returned to the individual participants, at which time I asked them to confirm the accuracy of the typed word (see appendix XVII). At this stage, I also encouraged them by phone and in writing to edit any information with which they were unhappy, or to include any additional information that they felt was important to them. Following the return of participant's comments and small typing corrections, transcripts were amended accordingly.

Excerpt from reflective diary:

> *'Have just spent the morning on the phone to all 12 participants. It was really nice to speak to them all again – they all sound in great form. They agreed to read over their transcripts and make any changes that they wished. However, I spent most of my time answering questions about out-patients appointments, medication and queries about how much they were physically allowed to do. I started each conversation wearing my researcher's hat, but invariably swapped this for my nursing one. They all*

described being nervous and tired during their first week following discharge and I wonder now whether this is a general response following MI. I feel that this area needs some study, from the aspect of social and professional support that patients may require when returning home.

Following the return of transcripts, I transferred data to the computer software N6 Student NUD*IST (Qualitative Solutions & Research, Bundora, Vic., Australia), which facilitated the organisation, management, retrieval and presentation of data. Line by line analysis of the interview transcripts was completed, to ascertain the descriptions of each participant's pre-hospital experience. Each emerging area of interest was coded with a term (or 'node as named in NUD*IST)', which best described the data. This continued until all data were represented by a node. I repeated this process five times for each interview until no new nodes emerged from the data. This produced 46 nodes, which were then expanded or compressed into 9 hierarchical top tree-nodes or categories. A development of ideas was stored in dated memos, whilst a record of hierarchical tree-node structures was recorded as they occurred (see appendix XVIII). This facility allowed for the potential of other researchers to follow the reflective process of data analysis via an audit trail and as such enhanced the credibility of the study.

6.7. Credibility of Research Findings

The need to demonstrate research credibility is one of the major challenges facing feminist researchers undertaking qualitative research (Jackson 1997) and techniques to establish credibility were addressed from the beginning of the study. When applying rigour to their research studies, qualitative researchers have frequently used terms such as truth-value, auditability and fittingness (Guba & Lincoln 1981, Sandelowski 1986, Slevin & Sines 1999) whilst representation is an additional concern of feminist scholars (Wilkinson & Kitzenger 1996). These four considerations are deemed more appropriate to the philosophical underpinnings of the feminist qualitative paradigm, than the use of quantitative alternatives such as validity, reliability and generaliseability (Andrews 1996, Holloway & Wheeler 1996, Cutliffe & McKenna 1999, Slevin & Sines 1999). This discussion outlines the methods employed to assure the truth and auditability of research findings, whilst simultaneously enhancing their transfer value and representation potential. To this end, reflective techniques that were incorporated into the study design were deemed to be instrumental in maximising the overall credibility of the study.

6.7.1. Representation

Representation is described by Hall (1997) as the use of signs, language and images to allow us to portray people's experience of the world to others. Donnelly (2002) adds that researchers are constantly producing meanings about other people's worlds, by representing participants' lived experiences in specific ways. Hall (1997) suggests that as researchers we

should acknowledge that representation involves social conventions and unequal power relationships, whilst Wilkinson & Kitzinger (1996:18) point out that 'our work should not be so much about the Other as about the interplay between the researcher and Other.' They add that although feminist researchers aim to make visible the hidden worlds of oppressed people, this goal involves a struggle between the acknowledgement of the impossibility of full representation and the assertion that our work is still credible. In line with feminist research principles, the pursuit of power sharing relationships was a major concern within the research relationship and as such was integrated within the study design. Performing the study *with* women *for* women, was considered to strengthen the representation potential of the study, that would otherwise have been lost if the study had been purely performed *on* women. I concur with Cheek & Porter (1997) who suggest that the people we decide to represent and how that representation materialises, reflects our own beliefs, values and assumptions about reality and how that reality is to be understood. Therefore, rather than strive for an unattainable illusive and value-free reality, my biases and subjectivities were presented in a transparent way and open to critical feminist analytic inquiry.

Excerpt from Reflective Diary:

> *Although I know that my social position affects how I interpret data and assign meaning to participants' words, I cannot extrapolate one part of my social identity from another. Other than to be sensitive and reflective to its influences and effects on study outcomes, I have to accept that I also need to be true to myself and acknowledge the potentially enhancing experiences and skills that I bring to the situation.*

Locating myself in reflective accounts, I acknowledged these insights as contextual influences of the research reality. I believed that my social class, accent, deportment and education might have served to sway the balance of power during interviews when those aspects of my social position were different to those of my participants. I realised that my professional and academic backgrounds infiltrated all aspects of the data collection, from the recording of field note entries, to interview questions and data interpretation. In the area of knowledge production and search for truth, what was considered legitimate and upheld as knowledge was influenced by my social position. The choice of stories deemed suitable for inclusion into my field note journal was based on my idea of truth and relevance. The areas that I wished to delve into, with greater detail during interview, were similarly influenced by clinical experiences, cultural background social position and research agenda. As such, I openly acknowledged the situatedness of representational claims and have subsequently incorporated many of these reflective accounts into the main body of the text as an enhancement to the overall credibility of the study.

6.7.2. Truth Value

Sandelowski (1986) describes truth-value as subject-orientated reality, with many researchers suggesting that a study is deemed credible only if findings and interpretations reveal accurate descriptions of the participants' world-view (Guba & Lincoln 1981, Sandelowski 1986). Meehl (1986) states;

> So I began with the presupposition that the external world is really there, there is a difference between the world and my view of it and the business of science is to get my view in harmony with the way the world really is to the extent that it is possible. There is no reason for us to have a phobia about the word 'truth.'
>
> (Meehl 1986: 322)

Holloway & Wheeler (1996) suggest that involving participants in every aspect of research design is one of the most robust methods of assuring these goals. I was acutely aware that my own biases were the most obvious threats to truthfulness and in an attempt to minimise this effect I involved participants and other experts in the truth and consistency assurance process. Firstly, the use of sequential within method triangulation enhanced the truthfulness of the final results. The field entries, which greatly informed subsequent interviews, originated from the stories of almost 200 MI patients. Secondly, prior to the main qualitative inquiry, a pilot interview tested the appropriateness of themes emerging from the analysis of journal entries and provided further opportunity for refinement. The use of participants' stories to guide interviews for other participants, increased the appropriateness and consistency of interview questions and as such were considered to be potentially truth enhancing.

There is general consensus that the determination of credibility is best accomplished when data and interpretations are returned to their original sources (member checking), to reveal whether results are believable and recognised by those who contributed to their existence (Guba & Lincoln 1981, Ashworth 1993, Slevin & Sines 1999). Following interviewing, the narratives recounted to me were taped and transcribed verbatim, following which they were returned to their original sources. When participants had confirmed that the transcripts were an accurate account of their interview experience, the participants were provided with an opportunity to edit or expand on the information that they already provided (see appendix XVII). Following the interpretation of data, a summary of results was sent to each of the study participants. They were requested to comment on the interpretation of interviews and whether or not they could identify with the ideas being presented. They were additionally requested to comment on their experience as a research participant and how this experience may have been further enhanced by the researcher.

Excerpt from reflective diary:

Spoke to two participants by phone today and three others yesterday. All had received their lay summaries and were eager to discuss the results with me. In general, they identified with the study's findings and four of them suggested that it was good to know that they weren't the only ones 'acting daft'. Many of them laughed at their own behaviour and could now see how they had convinced themselves that it was something else. Three stated that they still couldn't believe that they had experienced a heart attack, because their symptoms just hadn't 'fit the picture'. Two participants wished to receive more detailed results and I promised to forward this additional information. On questioning them on the research experience, all suggested that it was a positive experience and that they had learnt a lot about themselves. They greatly appreciated being kept informed of its progress and I'm now delighted that I did this – it seems to have meant a great deal to them.

Appleton (1995) suggests that enlisting the assistance of expert colleagues (peer review) to verify the categorisation of data, not only confirms and verifies the interpretation, but also guards against researcher bias. Following the analysis of data, two experienced researchers were each given two randomly selected transcripts to code. We then compared my coding of the same transcripts with their interpretations and although at times we used some different terms to describe data, we agreed that the entire data were represented within the 9 broader categories. The involvement of participants and experts in this manner provided strong correlating evidence to support the truthfulness and consistency of the research findings.

6.7.3. Auditability

Consistency, in the traditional positivist sense, usually refers to the repeatability, replicability and stability of a study in terms of the clarity of the final research report. However, because the aim of feminist qualitative research is to uncover the invisible worlds of women and other oppressed groups, the uniqueness of individual situations creates difficulties when the term is used in this manner. Hall and Stevens (1991) suggest that there is a need to develop consistent research processes and outcomes, by examining methodological and analytic decision trails throughout the feminist inquiry. They refer to this process as 'auditing the inquiry' (Hall & Stevens 1991:19) whilst Guba & Lincoln (1981) recommend that the concept of auditability should be the measure of consistency in all qualitative research and advise that researchers leave an audit trail so that the pathway of decisions can be followed and critiqued by others.

Hence, a clear pathway outlining crucial aspects of the study was incorporated into the research design and maintained throughout the study's growth and development (see appendix XIX). This included the transparent presentation of decisions from method selection to data dissemination processes, thus allowing the reader to assess the consistency of the study processes and dependability of data. As previously mentioned, I kept memos and notes

in both a reflective diary and a field journal to enhance this decision/audit trail. In line with feminist methodological principles, the reflective diary allowed me to interpret my own thoughts and feelings about my participation and role in the whole research process. The use of the computer software N6 Student NUD*IST (Qualitative Solutions & Research, Bundora, Vic., Australia), further enhanced the consistency of the study by its in-built audit trail of memos and decision making records.

6.7.4. Fittingness

Due to the unique nature of individual experiences, the generalisation of results to other groups is not an aim of feminist qualitative research. In fact, making such essentialist claims is contrary to modern feminist thought, as an 'all thinking all dancing' homogenous female group is not considered to exist (Oakley 2000). However, the likelihood that findings may fit 'similar' groups of women gives significance to gender as an aspect of the social life within which the participants' lives were lived and within which the research experience developed. Regardless of difference, I believe that living as a female within a patriarchal society, will ensure that certain experiences will be common to or shared by most women. Marchbank (2000) adds that women's experiences of being women may be diverse and distinct, yet their experiences of and treatment by society are so similar that certain common problems and responses are shared. Oakley (2000) adds that the sheer fact of being a woman, places us in the same boat, if not on the same deck or in the same cabin as other women.

Ascertaining those gender aspects of the study that may be shared by other women was therefore central to the study aims. According to Lincoln & Guba (1985), providing rich data, which is sensitive to the contexts of gendered lives will in itself suggest its own sphere of relevance and application. Schofield (1993) supports this view and adds that in order to determine the 'fittingness' of findings, a substantial amount of information should be gathered and studied. In the study, an extensive range of rich descriptive data was obtained from different participant sources and different institutional sites, whilst a substantial amount of supporting international literature accompanied the interpretation of findings. Schofield (1993) adds that this use of multi-site investigation can enhance the applicability of study findings, as concentrating inquiry in any one site may yield attributes that are purely site-specific. Hence, although it is acknowledged that women have different life experiences, I believe the study findings may fit those aspects of gendered life that are shared by many women living in a patriarchal society.

6.8. Conclusion

The individual face-to-face in-depth interview was chosen as my data collection method, as I considered that in recounting their stories, the twelve women would allow me to glimpse aspects of their cardiac experience from their individual and shared world views. The use of field-note entries to direct the interview experience contributed to a deeper and broader

understanding of the researched phenomenon The ethical principles of beneficence, respect for autonomy and non-maleficence guided the efforts to protect the rights of the individual. However, the feminist principles of representation, power sharing and emancipation served to enhance these efforts further by drawing attention to the researcher-participant relationship, potential researcher biases and the vulnerability of the participant in the research process. Although I recognised that the greater power in the research partnership resided with me, in combining both sets of principles, I hoped that the rights of the individual were at least protected and at best enhanced by self-gain. The need to demonstrate research credibility was considered a major concern for this study and techniques to establish credibility from the outset included issues associated with truth-value, auditability, representation and fittingness. These four issues were recognised as appropriate to feminist inquiry and all contributed to the probability of a high transfer value. Central to the establishment of credibility was the concept of reflexivity and the employment of peer validation and participant involvement and review. These techniques helped to demonstrate how grounded, cogent, justifiable, relevant and meaningful the study was to the cardiac health of women.

Chapter 7

Qualitative Findings & Model Development

7.1. Introduction

The psychosocial processes that influenced the pre-hospital behaviour and experiences of the twelve participants were considered dynamic and multifaceted. Emerging from the findings were four main themes (1) Seeking Understanding (2) Seeking Sense of Self (3) Seeking Meaning and (4) Seeking Safety and these are presented and discussed here. Emotion and cognition framed each theme and worked in conjunction with and/or independently of each other. A new self-regulation model of illness behaviour the 'Woman's Heart Model' (see appendix XX) emerged from the study findings and its development is outlined in this chapter. Finally, the new model is critiqued in light of its potential to contribute to the existing knowledge base of women's cardiac health experiences. The findings are presented here according to the emergent themes, associated sub-themes and derived model stages; however, the limitations of the qualitative strand are first acknowledged and the findings discussed in light of such limiting factors.

7.2. Limitations

- **Limitations of Field Journal**

The field journal contained memos of my conversations with patients during the consent procedure. Rather than actual statements, these memos were my perceptions of the many conversations that had taken place, between the participants and me. I documented aspects of the conversations that seemed interesting or relevant to the study and omitted aspects that I considered irrelevant. I am aware that my own biases and research position, together with my memory recall, may have rendered my field journal a selective account of the 'field' experience.

- **Limitations of In-depth Interviews**

Some of the richest accounts of stories that I heard occurred after the tape recorder was switched off. The use of technology, for all its benefits, might have restricted the natural flow of conversation.

- The participants consisted of women from 57 to 83 years of age. I did not have any data from younger or older women and hence the findings from the qualitative analysis may not pertain to others from different age groups.
- Participants included women only. The inclusion of females with males may have allowed greater insights into gendered behaviour.
- The sample did not include significant others who may have influenced help-seeking behaviour. The inclusion of significant family members/friends may have provided contextual data that might have been pertinent to the study.

- Only women attending the Dublin Major Academic Teaching hospitals were included in the sample. The inclusion of women from rural areas may have revealed different insights into pre-hospital behaviour.
- Participants did not include women from ethnic minority groups hence the findings from the qualitative analysis may not pertain to this group.

7.3 Findings

7.3.1. Seeking Understanding → Stage 1 of Model

This first theme emerging from the study findings 'Seeking Understanding' became the first stage of the Woman's Heart Model (see appendix XX). This stage describes the onset of abnormal physical sensations, which stimulated the activation of an integrated emotional response and cognitive interpretation of the illness risk. During this time, attempts were made to understand the nature of the symptoms, their likely cause and probable outcome. The emotional response to symptom onset depended very much on the severity of experienced symptoms. In seeking understanding, these emotional responses triggered a paralleling cognitive interpretation of symptoms. Much of the information and knowledge used to interpret symptoms emerged from episodic and semantic memories. Episodic memory can be defined as autobiographical memories of previous illness experiences (Alonzo & Reynolds 1997). In the present study, personal experiences with heart disease and other health problems were included in this definition, as were previous help seeking behavioural practices.

Semantic memory may be formed by more common or abstract knowledge gleaned from the external environment (Alonzo & Reynolds 1997). In the present study semantic memory was considered to be influenced by cultural attitudes to health and illness, societal beliefs about the presentation of MI, the likely candidature for the disease and health messages delivered in the mass media or directly by health care professionals. In short, the semantic memory was influenced by the gendering of MI by biomedicine. Consequently, the internal and external environments were hugely instrumental in directing interpretation attempts, as the individual continuously looked to self and society for validation of effort. In seeking understanding therefore, the identity and location of the 'self' within the wider socio-political environment determined initial interpretation and subsequent coping initiatives.

7.3.1.1. Sub-theme 1: Symptom Awareness

- **Prodromal Symptoms**

'Seeking Understanding' began when the participant realised that something abnormal had occurred. Regardless of the type of symptom experienced, the impact was of sufficient magnitude or duration to stimulate an awareness that something was wrong. The desire to

understand the experience emerged when symptom awareness was triggered (where excerpts are presented I have employed the participants chosen pseudonym only).

> *Breda: I felt (pause) a very funny sensation and I thought it was something that'd go away. But it was getting worse and it's very hard to define what it is.

Each of the women involved in the study described feeling unwell during the weeks or days leading up to the main acute event. Many of these sensations or prodromal symptoms were non-specific, had a gradual onset initially yet eventually persisted or became more intense. The most common cited complaint was a feeling of increasing tiredness and exhaustion.

> *Annette: I told her (GP) 'bout that I hadn't got any energy. Tired and I didn't want to do anything. I didn't take an interest in anything. I was whacked.

> *Breda: I wasn't feeling the best I suppose a few weeks before I came in. Like it's an effort for me to be walking around. Kind of dragging yourself around, you know.

Other precursors to the main event included increasing breathlessness and more frequent episodes of angina symptoms. Chest discomfort, however, was reported by only 4 participants during the prodromal period, yet was more prevalent during the acute event.

> *Patricia: I'd two episodes of angina. One last Tuesday which wasn't too bad and the following day the same thing happened.

Numerous other studies have similarly cited the presence of prodromal symptoms in women with MI (Hofgren et al 1995, Miller 2000, Mc Sweeney et al 2003) with Mc Sweeney et al (2003) suggesting that 85% to 90% of female participants report such events. Hofgren et al (1995) suggest that tiredness was also the most frequently cited symptom in their study, reported by 29% of their patients. Likewise, Mc Sweeney et al (2003) in a quantitative study of women's warning symptoms during MI, suggest that 70% of their participants (N=515) cited fatigue as the predominant prodromal symptom. In further support of the present study findings, Miller (2000) suggests that whilst some women reported feeling mild chest discomfort and/or shortness of breath, weakness and fatigue were more common to this group. Hofgren et al (1995) add that only 27% of their patients reported chest discomfort in the days or weeks leading up to hospital admission, whilst Mc Sweeney et al (2003) report that only 30% presented with this symptom during the prodromal period.

- **Intense Symptoms**

Intense symptoms signified a continuation or general worsening of the situation and many different attempts were made to describe the experience. However, only four women used the

word 'pain' to describe their symptoms, whilst others described the sensations using different terms.

> ***Chest pain:*** 'extreme pain', 'severe pain', 'nothing would stop it', 'very slight achey pain,' 'pain got really bad then… it was pushing me back against the wall'.

Pain descriptors were not limited to the chest, but rather included other sites of distress.

> ***Site of pain*:** 'pain in my throat', 'jumped with a pain down me arm', 'pain down my left arm …was unbearable to touch', 'my shoulders were hurting'.

However, the majority of participants in the present study chose to describe their chest discomfort in words other than 'pain'.

> ***Alternative descriptors:*** 'it was just like somebody sticking something right down, piercing your heart literally', 'this awful tightness', 'very very bad constriction', 'tight around my chest and lungs', 'terrible sensation under my throat and across my chest and back', 'my back was on fire'.

In a study examining gender differences in symptom presentation during MI, Milner et al (1999) also reported that women were more likely to use alternative descriptors such as 'pressure', 'heaviness' or 'tightness' than the word 'pain'.

> *Patricia: I wouldn't regard it as pain. 'Twas more just, this awful tightness. I couldn't breathe and I felt dizzy and I started to perspire.

> *Breda: …and you can't really describe the sensation. As I said, you don't describe it as a pain.

Most participants experienced one or more 'atypical' symptoms such as breathlessness, gastro-intestinal disturbances and pallor either alone (5 participants) or in combination with chest discomfort (7 participants).

> ***Breathing difficulties***: 'gasping', 'couldn't get a breath', 'I was drowning'.

> ***Diaphoresis*:** 'the sweat started pouring out of me head', 'felt dizzy and started to perspire'.

> ***Gastro-intestinal distress*:** 'felt like I was going to be violently sick', 'got diarrhoea', 'wanted to get sick and thought I was going to faint'.

Loss of Colour: 'I looked like death warmed up', 'lost my colouring', 'suddenly felt weak all over'.

Five women never experienced any chest discomfort or pain during either the prodromal or intense periods of their MI symptoms.

*Annette: I had no pain, no tightness in my chest, no pains in my chest, no pains in my arms, no pains in the neck or whatever you're supposed to have. I had nothing like that, I was breathless.

Although numerous studies have indicated chest pain as a major acute symptom of MI in women (Meischke et al 1998, Penque et al 1998, Milner et al 1999), others suggest that women employ different descriptors (Canto et al 2000, Shlipak et al 2001) or that it is less prevalent in female MI patients (Meshack et al 1998, Miller & Kollauf 2002). Other researchers support the 'atypical' symptom findings of the present study and suggest that women experience less 'typical' MI symptoms than their male counterparts (Gregor et al 1994). In particular, women have reported experiencing slightly less chest pain (Meischke et al 1998) but more nausea (Goldberg et al 1998) breathlessness (Meischke et al 1998) and back/neck pain (Goldberg et al 1998, Penque et al 1998).

Despite the biomedical gendering of MI and the prevailing messages indicating chest pain as a main symptom of a cardiac event, six women in the present study did not report this experience. However, other studies also report such findings of 'silent ischaemia', with the Framingham study (Kannel & Abbott 1984) suggesting that 35% of women with MI experienced no chest pain or discomfort. Mc Sweeney et al (2003) also report cases of silent ischaemia, suggesting that 43% of women in their study did not experience any type of chest pain or discomfort with their MI. Similarly, Canto et al (2000) in a large quantitative study examining clinical characteristics of MI, reported that of 434,000 MI patients 33% had no chest pain. A greater proportion of women occupied the silent MI group than the non-silent MI group (49% versus 38%).

7.3.1.2. Sub-theme 2: Emotional Response and Cognitive Interpretation

The onset of MI symptoms, whether typical or atypical, prodromal or intense in nature, provided the stimulus for a health-related, problem-solving episode. Initial cognitive strategies were directed by emotional responses of curiosity and concern as the women dug deep into their own knowledge resources to understand what was going on and to 'name' the experience.

*Annie: I said, this is ridiculous. What's gone wrong with me now (laugh)?

As symptoms intensified, emotional responses began to resemble deep anxiety and eventually fear. During these times cognitive responses seemed to act to control these emotions from turning into panic.

> *Una: The pain was getting worse, yeah. And I kept saying it'll go away now in a minute, it'll go away now in a minute.

> *Breda: I sat for a while trying to figure it out...If you can't understand what's happening to you, you panic.

In the cognitive attempts to appease emotions of concern, 'seeking understanding' included attempts to determine the origin of symptoms so that a label or name could be attached to the experience. To this end participants attempted to attribute cause by comparing symptoms with their previous experiences of illness and health and by sourcing relevant social and health messages. The ability of participants to label the experience correctly was further influenced by their beliefs about MI, perceived personal risk and stereotypical definitions of likely MI candidates.

- **Attributing Cause**

The initial attempts at interpretation frequently involved attributing symptoms to co-morbid conditions. Many of the women had previous illness experiences with chronic health complaints such as arthritis, diverticulitis, angina and asthma. The presence of these co-morbidities and the associated episodic memory of previous illness behaviour, meant that women first explored the possibility that experienced symptoms were associated with their normally occurring health concerns.

> *Rebecca: But I still was putting it down to asthma.

> *Pauline: But I kept saying, I'm after hurting it, because, I've arthritis in me left leg. And says I, its gone into me arm now, that's what's after happening.

Others attempted to incorporate symptoms into a perceived normal or near-normal health state. Although feeding from the emotional response, the cognitive interpretation process also acted as an appeasement to certain emotional states. Dismissing symptoms to a benign cause seemed to act as a suppression of concern or anxiety, whilst also simulating a state of normality.

> *Lara: Then we went for a meal that evening and I woke up the next morning around five and thought I had indigestion.

Two women attributed symptoms to the menopause and although for some women the menopause may be considered an abnormal state of health (Foster 1995), the study participants seemed to view this as a natural life event. Hence, attribution of symptoms to the menopause appeared to be another attempt at normalisation.

> *Una: I put it down to something else 'cause I'm menopausal and I thought 'Oh, the old menopause at work again'.

Dempsey et al (1995) reported similar findings in their examination of women's decision-making processes during symptoms of MI. They too suggest that a frequent response to symptom onset was a perceived insignificance. Moreover, many of their participants initially attributed their symptoms to a benign cause such as arthritis, menopause or indigestion. In the present study, prodromal symptoms in particular were perceived as insignificant, with increasing tiredness or exhaustion explained as a normal part of daily experiences.

> *Cathrina: I was feeling more tired. But thought maybe you know, after been working all day.

Pattenden et al (2002) also report that as prodromal symptoms occurred a few days prior to hospitalisation, this led to a normalisation or minimising of symptoms. Hofgren et al (1995) explains that because of the non-specific and diffuse nature of prodromal symptoms, it is extremely difficult for the patient to make an adequate assessment of the gravity of the situation. Consequently, prodromal symptoms are frequently dismissed by MI patients as inconsequential.

> *Annette: I'd put it down to age.

> *Breda: And I was saying to myself, you can't run around or have the energy that you had years ago.

- **Beliefs about MI**

Semantic memory related to typical symptom onset, likely candidature and perceived personal risk contributed to the individual beliefs about MI. The interpretation of symptoms and subsequent help seeking behaviour were hugely influenced and frequently delayed because of this biomedical gendering of MI. In 'seeking understanding', experienced symptoms were placed within a cognitive framework or, as Bishop & Converse (1986) describe, an 'illness prototype', which had been developed by drawing on the knowledge gained from personal experiences as well as messages received from the external environment. Consequently, the assimilated prototype that emerged within the findings suggested a male victim clutching chest and arm. A similar illness prototype was reported by

Dempsey et al (1995) with many of their female participants describing typical MI symptoms with a male victim.

In the present study, this prototype seemed universal to all twelve women, as a constant theme emerging from each interview was the mismatch of experienced symptoms with those expected to be present with an MI. When experienced symptoms were different to the long assimilated 'illness prototype', difficulties were encountered in attributing the symptom(s) to a cardiac cause. The participants discussed their symptom interpretation with me.

> *Breda: What put me off, I don't get, never got a thing in my chest, or down my arm. You don't have pain, there's no pain, there's nothing. Nothing (pause) to define there's something to do with your heart.

The existence of both prodromal and acute symptoms, led many participants to assume that they were not experiencing an acute illness but an evolving cumulative event. Rather than the expected crushing chest pain, many experienced a slow onset of the condition with mild chest discomfort or breathlessness. A mismatch was also apparent for some women when comparing present symptoms with those experienced with a previous MI. Intuitively, it would seem plausible that patients with previous experience of MI would be able to recognise symptoms and respond quickly. Surprisingly, their previous cardiac history did not appear to expedite care-seeking behaviour, as all attempted self-treatment strategies. However, suggestions put forward to explain this apparent paradox include evidence that many patients experience a different set of symptoms with a subsequent MI (Zerwic 1999, Pattenden et al 2002).

> *Annette: I remember the first one I got. I had pains in me chest. That didn't happen this time.

Some studies add that patients with prior experience of MI actually have greater care-seeking delays than those with no cardiac history (Turi et al 1986, Goldberg et al 1992). Although having experienced the condition before, the fact that symptoms were different made interpretation more difficult and resulted in protracted care-seeking delays.

> *Patricia: It was much worse before. I got pain before, I didn't get pain this time.

The women were also questioned about what they perceived a heart attack would be like. Each informant provided different versions of the same 'typical' MI picture.

> *Deirdre: So I, I just thought you know, people just rolled over, had a heart attack, rolled over and died.

Typical symptoms of severe crushing chest pain, left arm pain and associated collapse were also described by participants. For many, their image or expectation of a heart attack frequently included a dramatic and immediately fatal incident.

> *Cathrina: There was one man, he was shaving himself in the bathroom, dropped dead. There was another guy out on the street, walking along, collapsed and died.

> *Breda: My idea of a heart attack is what I saw in films. D'you know, when you see you clutching your chest. And you have this terrible pain and it goes down the arm.

It would appear from the interviews that the biomedical gendering of MI had filtered into the semantic memory of the 12 women, as each held the prevailing picture of a male heart attack victim in her semantic memory. Moreover, when describing symptoms, eight women in the present study referred to a heart attack experienced by a close family member or friend. Only one of these accounts portrayed a woman with this condition. Many studies support these findings, suggesting that 'being male' is positively associated with the belief that a cardiac threat is imminent (Meischke et al 1995a, Foster & Mallick 1998).

> *Lara: I mean, my husband died when he was standing, of a heart attack and he just openly clutched his chest and he was gone. And that's what I'm expecting a heart attack to be like. I didn't know it was any different.

Misinterpretation of 'atypical' symptoms by most participants is understandable given the biomedical messages and media coverage of classical symptomatology. Health literature and media victim portrayals frequently emphasise 'typical' symptoms as dramatic in onset with central chest pain radiating down the left arm, diaphoresis and possible collapse. Ruston et al (1998) in an examination of help seeking behaviour for MI, suggest that most of their female and male participants also expected a heart attack to be a dramatic event and frequently referred to images portrayed in the media.

However, for many of the twelve participants in the present study, the onset of their MI was less than dramatic but rather began slowly and as a complex array of 'atypical and 'typical' symptoms. Hence, protracted amounts of time spent trying to understand symptoms seems a logical response to vague ambiguous symptoms, that social and biomedical MI messages portray as insignificant. In support of these findings, Horne et al (2000) suggest that a mismatch between symptoms expected and experienced occurred in 58% of their patients (N=88) and was associated with care-seeking delays. Pattendan et al (2002) also report difficulties for their participants in correctly labelling the health threat. Consequently, both episodic and semantic memory play a major role in determining personal susceptibility to myocardial infarction and the interpretation of symptoms.

- **Perceived Vulnerability**

Perceived vulnerability or personal risk of a heart attack also influenced symptom interpretation and subsequent coping strategies. The belief that the 'self' is at risk of a heart attack was informed by episodic and semantic memory files and the resulting 'illness prototype' assimilated by these women. As the majority of those interviewed (10 out of 12 women) did not think they would ever experience a heart attack, the prevailing 'illness prototype' may have contributed to a perception of low vulnerability or personal risk.

> *Mary: Although my husband had died of a heart attack, but I was still, couldn't convince meself that it was going to happen to me... No. No, never thought I was (at risk).

In a recent paper on women and cardiovascular health, the Women's Health Council (2003) suggest that women in Ireland are generally unaware of their cardiac risk and are more concerned with the possible risk of breast cancer. However, over their life-times, it is estimated that women are ten times more likely to develop coronary artery disease than breast cancer (Ulstad 2001) and most likely to die of heart attack or stroke (Lancet 2003).

> *Annette: It's just the thought, like you say to yourself, why me, not *me*?

Other researchers have also reported similar findings of perceived invulnerability (Dempsey et al 1995, Miller et al 2000) whilst Ruston et al (1998) suggest that least care-seeking delays occurred when individuals perceived themselves as potentially at risk. Holliday et al (2000) also support these findings and conclude that women who did not think they would ever experience a heart attack or who thought MI presented like a cardiac arrest, were most likely to experience protracted care-seeking delays.

> *Pauline: I don't know, I, just, don't know why. But I never thought I'd have a heart attack.

Understanding where the 'self' was located within the experience was also evident in the manner in which the 'self' was consistently compared to others. Beliefs about MI and personal risk were frequently rationalised by evaluating attempts at living the healthy life advocated by society and medicine and by comparing their health behaviours with those considered less healthy. Perceived vulnerability was lowest when women felt they were conforming to recommended healthy practices.

> *Lara: Not at all. I mean, I'm not overweight and I'm very active. I walk everywhere. I rarely take the bus.

*Rebecca: I never smoked so it's another reason maybe I wouldn't have, I never drank till I was 40.

Although semantic memory contributed to specific knowledge of cardiac risk factors, few women considered family history as a possible contributing factor. Although 10 women spoke about a positive family history of heart disease, only one woman linked this risk factor to a personal illness threat.

*Una: Never crossed my mind, even though there's a history in my family.

*Annie: I thought, definitely must be in our genes. 'cause I never smoked in my life and I don't even take a drink. So, as far as I'm concerned, deep down, I must admit, it had been always at the back of my mind, would the day come?

Past experience with an MI, didn't necessarily equate to a heightened perception of future risk. Although five women had experienced a previous MI, only two linked this history to an increased personal risk.

*Patricia: I got it before you see. I knew I would be liable to get one again.

*Cathrina: Even though I knew I had all my arteries cleared and whatever, it can happen again, so I suppose you can have another blocked artery I suppose.

Others felt that a clean bill of health from the professionals would lessen potential risk or protect them from further episodes.

*Breda: Like, I wasn't too sure this time that it was some sort of a heart attack. They had said to me it wouldn't happen again.

*Mary: No never. No doctor ever said to me that my heart, that there was something wrong with my heart.

Pattenden et al (2002) report similar results and suggest that even though all of their participants had a previous history of MI, many thought that their lifestyle changes or therapeutic intervention would protect them from future cardiac problems.

- **Candidature**

When asked about the most likely candidate (women versus men) for having a heart attack, eight women felt that men were more likely to experience one. In the present study, many women believed that this increased risk in males was directly related to their life-styles

> *Rebecca: I just think, men. And in stressful jobs, I think that's what it was with my husband and I sort of worry about them, I'd worry about men. You know, I try to say to the girls, go easy on them you know. They've a hard life too, you know and that.

Other researchers have also reported the persistence of stereotypic expectations about the typical cardiac patient (Dempsey et al 1995, Miller 2000) and suggest that this gendering of MI to a male cardiac patient further reduces the sense of vulnerability amongst women. Three women suggested that both genders were equally at risk of the disease whilst one woman suggested that women were most likely to experience a heart attack. It was also suggested that women were now adopting similar lifestyles to men and so were 'catching up' with the men.

> *Una: I'd normally have said men, because it used to be. It's not quite the same thing now but it used to be that more men smoked and more men drank than women. But nowadays it's almost 'even Steven'. Because women are smoking a lot earlier and they're drinking a lot earlier.

7.3.1.3. Interpretation of Stage 1 Findings

In 'seeking understanding', all twelve women took time to assess their situation, compare symptoms with their internal and external information reserves and finally attach what they perceived to be the most likely name to their experiences. Emotions were seen as a pivotal part of this process as they were crucial in directing initial and ongoing goal-seeking strategies. Emotional responses to visceral symptom onset provided the impetus for 'seeking understanding' and so greatly influenced subsequent cognitive and behaviour initiatives. Although often incorrect, the name given to their symptoms was greatly influenced by social and biomedical gendering messages that were frequently in conflict with the presenting condition. In mislabelling their condition, it would be tempting to assign a maladaptive label to the care-seeking behaviour of these participants. However, rather than maladaptive, the behaviour of these women seems appropriate given the social and medical information resources available to them and the socially accepted stereotypical prototype of MI. Unfortunately, the mislabelling of symptoms meant that subsequent coping initiatives which were commenced in Stage 2 were misdirected towards a benign cause, whilst futile self-treatments resulted in protracted help-seeking delays.

7.3.2. Seeking Sense of Self → Stage 2 of Model

The second theme emerging from the study findings 'Seeking Sense of Self' became the second stage of the Woman's Heart Model (see appendix XX) and is characterised by covert coping behaviours. In gaining what was perceived to be a clear understanding of the experience, participants labelled their symptoms and initiated self-treatments. Participants focused on coping behaviour directed at controlling or curing the illness threat whilst constantly comparing self and actions against societal norms. Coping has been described by Lazarus & Folkman (1984: 141) as 'constantly changing cognitive and behavioural efforts to manage specific internal and/or external demands that are appraised as taxing or exceeding the resources of the person.' Buunk & Gibbons (1997) suggest that society provides a continuous influx of contacts and comparisons throughout this coping process, which directs subsequent behaviour. Individuals use these comparisons to predict normality i.e. how the 'self' should feel or behave and whether coping strategies are within socially acceptable parameters.

Jenkins (1996:52) elaborates on this theme and suggests that the self is 'altogether individual and intrinsically social' and that a woman's sense of self 'depends on the validation of others for its continued security'. Jenkins' (1996) notion of social and personal identity draws from the classic work of Cooley (1922), which describes the 'looking-glass self'. This work suggests that when seeking sense of self, a woman also imagines how other people may perceive her and the judgement others may form of her. Cooley (1922) suggests that any given behaviour is first weighed against the reflection of the self to self and how this reflection may be perceived by others. Subsequently, in the present study self and social-identity became important determinants of chosen coping strategies.

7.3.2.1. Sub-theme: Emotional and Cognitive Coping

As with 'seeking understanding', emotional and cognitive coping measures framed the 'seeking sense of self' theme and worked independently of and/or in conjunction with each other to achieve health-related goals. As well as making social comparisons, a sense of control over the situation was an important emotional need and coping measures were enacted covertly in support or appeasement of this need.

> Una: The pain was getting worse, yeah. And I kept saying it'll go away now in a minute, it'll go away now in a minute and the thing isn't going to beat me. This is my reaction to pain.

However, if emotions seemed to threaten the covert nature of coping strategies or appeared to destabilise the sense of self, then cognitive initiatives attempted to quash these emotions e.g. anxiety was quashed by attempts at normalisation. The main aim of this cognitive 'safety

net' was to suppress the emergence of fear and the subsequent loss of control that may have ensued.

- **Self-Efficacy**

When confronted with the symptoms of MI the twelve women all acknowledged that their symptoms were beyond their commonly held idea of 'normal health'. However, they universally attempted to 'seek sense of self' by relating symptoms to their own personal experiences of health and illness and by initiating previously successful self-treatments. Huge effort was expended in stabilising the situation and implementing remedies or strategies to restore a perceived sense of equilibrium or 'self'. In this context, 'seeking a sense of self' was best served if the individual covertly controlled the experience to the stage where symptoms disappeared, became less intense or made more predictable in terms of their reoccurrence. The self-belief in the ability to control the situation (self-efficacy) emerged as an important coping mechanism. These coping strategies often mirrored previously successful self-treatments for co-morbidities and long-existing relationships with pain and 'self'. Emerging from these experiences was a strong and practiced desire to 'sort it out' for one's self.

> *Annette: No, I sort it out myself. I never had to go to a doctor.

> *Deirdre: I'm inclined not to go to a doctor, (pause) unless I have to (laugh). I'm great at pushing other people. But I'm not that good at going.

Self-treatment refers to strategies that were initiated to resolve and/or reduce symptoms, or alter their perception to a level that was considered non-threatening. All twelve women used self-treatments to varying degrees and these included self-medicating, sleeping, being distracted, changing position and more.

> *Una: So I took some Colofac, which I take for bowel. And I took, eh, Camomile tea, which usually gives a little bit of relief.

This confidence in the ability to self-treat and achieve control of symptoms and emotions is reflected in the 'self-efficacy' theory of Clark & Dodge (1999) who describe it as a reciprocal process that determines behaviour. They suggest that this confidence comes from the continuous interaction of personal, behavioural and social factors that provide the individual with the knowledge, desire and permission to manage her own care. In their model, an individual continually draws on her own knowledge, feelings and experiences, receives medical and social messages and then tries out a strategy. She will then appraise the effectiveness of this action and if deemed successful may repeat the action when a similar health concern arises. Successful self-treatments not only achieve the health-related goal but they also serve to increase the person's self-belief (self-efficacy) in self-treatment.

*Una: Well I suppose, (pause) bloody mindedness (laugh) Yep. Something like that. This is never going to get the better of me. 'I can handle anything' attitude.

Self-efficacy or the belief of one's own ability to control the health-related situation was an integral part of covert coping and 'seeking sense of self'. It was also a cognitive appeasement to emotional responses such as worry or concern. Worrying symptoms were quickly treated with tried and tested remedies thus suppressing anxiety and the pending emergence of fear. Self-efficacy and covert coping also eliminated feelings of embarrassment and 'making a fuss' as others were not invited into self-treatment attempts.

*Mary: I just put on the electric blanket and the fire in the room. I just thought it'd go away, that it was indigestion and it, eventually it'd go away.

Dempsey et al (1995) report similar findings when describing the decision-making processes of sixteen female patients with MI. Maintaining control and relinquishing control were the two main emerging themes of their grounded theory analysis, with reports of high usage of self-treatment strategies amongst participants. In other studies the decision by women to self-treat resulted in protracted time-wasting and significant delays to overt care-seeking behaviour (Meischke et al 1995a, Foster & Mallick 1998, Holliday et al 2000). For many women in the present study, previous illness experiences with pain or other co-morbidities provided them with 'an arsenal' of previously successful strategies and remedies and a confidence in their own ability to self-treat. The confidence to self-treat and covertly control the situation was so strong that a protracted amount of time was spent on these activities. Subsequently a major proportion of delay in seeking care was experienced during this stage.

*Lara: I bought Rennies and hoped that then it would go. And the Rennies did seem to help.

For one participant, her previous experience with heart disease and the medical advice she received during this time, prompted her to take Aspirin.

*Patricia: I didn't think it was bad enough to be a heart attack...Well I went back to my apartment, I took two Aspirin and I lay on the bed....My doctor said to take them...And it'd always stuck in my mind.

Although rarely mentioned by name during interviewing it is possible that 'denial' may have been masked or supported by the continuation or resumption of normal daily activities. Many studies suggest that denial is the most common response to symptoms of MI (Olin & Hackett 1964, Folkman et al 1986, Nolan & Wielgosz 1991) and as such may be considered a maladaptive coping mechanism. Dempsey et al (1995) describe how women denied the

significance of MI when they attributed their symptoms to a benign cause and that denial influenced subsequent behaviour patterns. However, in order for denial to exist, it is assumed that the individual refuses to acknowledge the situation for what it really is (Cousins 1982). It is not clear from these findings whether any of the twelve women were equipped with enough MI information to initiate denial tactics. Rather, the majority of participants used semantic and episodic memory files to establish their low risk to disease and their mismatch of expected and experienced symptoms. The label 'denial' was therefore disregarded as the reasoning behaviour of those interviewed was not considered maladaptive. It was replaced by the word 'disbelief'.

> *Una: I was putting it down to everything. I never thought of it as being a heart attack. Never.... And I was clutching my chest (laugh) and not knowing what. I never, it still never dawned on me, that it was a heart attack

Denial was also disregarded for similar reasons by Treloar et al (1997) and Holliday et al (2000) in comparative qualitative studies examining help-seeking behaviour by women.

- **Self and Social-identity**

The domestic and socio-emotional care-taking role attributed to women by society also played an integral part in determining behaviour. Traditional roles reify the wife/mother as the primary home-maker, provider of meals, laundress, carer and cleaner (see page 159). Despite prodromal and/or intense symptom onset, these domestic duties were frequently continued or completed. Social attitudes to health, illness and gender roles, are likely to have contributed to this behaviour especially if the normal response to non-specific pain is to 'battle it out'.

> *Una: So then I got changed and went off into town and decided I had some stuff (to do). I went into various shops and all I had to do, coming back, carrying groceries and pain in my chest getting progressively worse.

Self-efficacy was closely linked with self-identity and the desire to maintain the 'sense of self' during the whole experience. The 'self' was consistently modelled against 'self' and against society's view and valuing of the 'self'. Behaviour was adapted and modified according to societal norms and in line with stereotypical expectations. Whilst the continuation of daily chores may appear irrational in times of acute illness, these responsibilities appeared to provide a sense of 'self' and normality to mounting feelings of disconnection and uncertainty. Self-identity seemed merged within these gendered-roles and huge efforts were expended in trying to normalise the situation. For many women, foregoing these responsibilities seemed to be a source of stress due to the loss of 'self' or control they would have experienced.

*Annie: I went shopping. Just a very small shop really, for bread. I had all my other shopping done. And I came back, made a cup of tea for myself and my husband.

*Patricia: I didn't go out that evening, but I did my usual things around the house and I was fine.

The long established caring role, which was an integral part of self-identity, was not abandoned easily when symptoms commenced. Ten out of twelve women were mothers and although their families were reared, they continued to worry about their children's health and welfare, at times to the expense of their own.

*Rebecca: I don't worry about being sick. I'd worry more about the kids than my husband and I, I don't mind about myself. I mean, I will ne', I mean the doctor even'd say anytime I went to him, 'well why d'you come to me when it's all finished' you know (laugh).'

*Lara: No, I never go to the doctor. My kids are all the same. 'God, it's so hard to get you to the doctor. The least things wrong with us and you have us marching over there.'

As all participants were daughters, worry and concern sometimes extended to the welfare of elderly parents. Concern for others meant that for many women, the feelings and health of others were put ahead of their own.

Cathrina: Besides the point, my Mam was up with me. She came up to my house and I didn't want to alarm her.

Acting covertly maintained a sense of control whilst also reducing the likelihood of worrying others or creating a fuss. Descriptions of their various roles and worries suggest that for many women, self-worry was routinely superceded by their concern for family and associated daily roles.

*Linda: It was no good in frightening all the others and getting them upset, you know. I hate big fuss. I hate fussing everybody and you know, you think it will go away.

However, putting others first also tended to delay participants' decision-making processes. These findings are supported by Dempsey et al (1995) who also report delays associated with putting others first. Miller (2000) also reports similar findings and suggests that social role expectations frequently took precedence over vague or ambiguous symptoms. As with the

present study, many postponed seeking medical help until family commitments were attended to.

> *Cathrina: And I had promised myself on that Saturday evening that I would go to the doctor on the Tuesday. That was my intention. Because I was going down to collect my mother first in (a rural town) who was there with my brother.

These social concerns have also been reported in women recovering from MI (Revenson 1994, Rose et al 1996) and provide further evidence of how social roles may be deleterious to the cardiac health of women. It also emphasises the possible reluctance of participants to relinquish those responsibilities, which may define the identity of 'self' within the home. Conversely, for some women, worrying about others provided the impetus for changing health behaviour.

> *Lara: I've a twenty year-old son and I thought his dad died when he was only two and a half. An', I'm not going to leave him if I can help it so. I won't smoke again.

> *Rebecca: He said 'you're meant to take it easy' and I said 'I will. I will for everyone's sake.' I mean, I hate upsetting the kids and everything, I mean, you know, I hate to see them upset and eh, they worry about us, you know.

7.3.2.2. Interpretation of Stage 2 Findings

The main process at work in 'seeking sense of self' was covert development and manipulation of coping strategies to control or cure experienced symptoms. The type of strategy employed was directly dependent on initial interpretation of symptoms and perceived threat to health. As soon as a 'name' had been attached to the illness experience, coping strategies were enacted according to socially accepted norms of behaviour for that particular 'name' (Teel et al 1997). In 'seeking sense of self, the continuation of gendered roles and responsibilities maintained a semblance of normality and were incorporated into covert coping tactics. As all twelve women originally misinterpreted symptoms to a non-threatening cause, preliminary coping strategies resembled those used to control co-morbid or benign health conditions. Covert coping not only required the use of knowledge and behavioural resources, but also a huge degree of self-confidence in the ability to achieve the desired outcome. Hence, misunderstanding or incorrectly naming the experience, together with the self-belief of devised treatments may have delayed the commencement of appropriate help seeking behaviour. As soon as coping strategies had been initiated, participants evaluated their self-treatment attempts and in doing so entered the 'seeking meaning' stage of the model.

7.3.3. Seeking Meaning → Stage 3 of Model

The third theme emerging from the study findings 'Seeking Meaning' became stage 3 of the Woman's Heart Model (see appendix XX) and is characterised by periods of assessment and

re-assessment. During the development and manipulation of covertly constructed treatment strategies, resources were continually assessed in terms of their ability to resolve, control or alter the perception of the health threat. In this assessment and re-assessment of symptom experiences, participants attempted to establish the meaning of events and maintain control of the situation. During prodromal symptom onset, many women went through stages 1-3 many times as they integrated new information into previously held illness prototypes. Time spent processing new information varied between participants and depended on the duration of experienced symptoms. However, these stages were only re-entered until previously discounted symptoms either disappeared or became unmanageable. When intense symptoms emerged and deemed unmanageable, participants eventually realised the serious meaning and potentially life-threatening nature of their symptoms.

7.3.3.1. Sub-theme: Emotional and Cognitive Triggers

In 'seeking meaning', emotional and cognitive responses worked in tandem with one another once again, to construct a meaning about symptoms and their treatment outcomes. If treatments were deemed successful in controlling symptoms, then concern/anxiety was appeased and treatments were repeated or continued. However, if symptoms continued unabated then these emotions remained unappeased and in turn stimulated additional cognitive inquiry. The situation was then reassessed and a new meaning constructed. Coping initiatives were modified and different treatment strategies initiated.

> *Una: But it didn't really go. It helped it very slightly. So then I thought well, maybe, you know, if I sit down and relax for an hour, I'll be grand. Which I did and I had a cup of tea, another cup of Camomile.

As new information was integrated with existing knowledge about health and illness, participants sought new meaning within the situation. Symptoms were continually re-interpreted and new names or labels assigned according to the effectiveness or ineffectiveness of coping strategies. Treatment strategies continued if deemed successful and for as long as the situation was considered a non-health threat.

> *Lara: So the next morning I woke up and my shoulders (pause) my shoulders were hurting me and my back was on fire. But there again, I started to, the Rennies again.

Emotional and cognitive feedback loops ensured that participants moved backwards and forwards between 'seeking meaning', 'seeking sense of self' and 'seeking understanding'. If equilibrium was not restored following initial covert initiatives, then others were constructed in an attempt to restore control or balance. In 'seeking meaning', participants sought confirmation of the success of their treatment strategies; however, if symptoms persisted,

became more intense or provoked a fear response, then symptoms were re-labelled from a 'non health-threat' to a 'serious health-threat' and covert treatments were abandoned.

> *Una: It went deeper. It was like somebody sticking a poker into your chest. That's what it feels. And my lungs, felt like, closing, like your, you know like a melodeon, being squashed in.

> *Annie: I had a small spray at home and I used that, but I said, I don't think I'm using that properly because it didn't go. It steadily got worse and getting' kind of went all around my arms and my lungs and I really felt kind of a bit dizzy. And ehm, I said (whisper) this is definitely different.

Lazarus and Folkman (1984) suggest that a threat to health can be defined as the perception of pending harm or loss of health. Participants reported feeling that something serious must be wrong when treatment strategies were unsuccessful. The duration of symptoms and their failure to respond to treatment raised questions about a possible sinister meaning. Mora et al (2002) suggest that duration of symptoms may be considered a powerful predictor of care-seeking and is frequently used as a measure by which the seriousness of symptoms is judged. Dempsey et al (1995) report similar findings, suggesting that with the continuing of symptoms over time, a more serious illness is considered.

> *Annie: I knew by the pain, that it was getting worse. And then when it started to move around, you see, (whisper), the back of my lungs, I said this is definitely different. And it did cross my mind, my God, I hope I'm not having a heart attack.

> *Mary: I did take Predsol to try and break it up before I went to bed and I really had faith it'd work. But it wasn't wind and it wouldn't stop. So it just confirmed for me that it was the heart attack.

A new meaning and a re-labelling of symptoms to a serious health threat frequently followed cues where 'sense of self' began to disappear or became unstable. For some women, the loss of facial colouring represented a major warning sign that covert coping strategies had either failed or were likely to fail.

> *Annie: I looked at myself in the mirror and said, oh (whisper) you've gone an awful colour.

> *Cathrina: When I was having my heart attack, I looked at myself in the mirror and my whole face changed colour. Like, I mean, I was like death warmed up 'cause I would always have a reasonably good colour.

*Una: I was pouring sweat and I felt like I couldn't breath. And for the first time in my life I lost my colouring. I usually don't lose my colouring no matter how ill I am.

The realisation that symptoms had exceeded coping attempts became a cognitive trigger to the emergence of fear and a realisation of impending danger. The true meaning of the symptoms eventually became apparent to some women and they feared the consequences.

*Pauline: I don't know. That fear was there. And I think I knew then what was happening.

*Linda: I knew then what I was in for, you know? There was no, shadow of a doubt about that.

In 'seeking meaning', fear became the prominent emotion when covert coping strategies had failed and a new and more dangerous meaning was attached to the health threat. Unlike other emotional responses, participants were unable to appease the 'fear' emotion with covert cognitive and/or behavioural strategies. Fear of losing control of the situation and losing 'sense of self' initially emerged.

*Breda: So you're sitting there and then a panicky feeling comes over you. Because, we all like to know we're in a bit of control. But you're not in control. Because you can't figure out what it is and why it's happening to you. You lose all sense of control. It's like as if this things taking over completely, really. It's kind of like you're panicky really, the more you think about it. Like, it's YOU and not somebody else.

*Pauline: I was very frightened. 'Cause I didn't know what it was then. It got completely out of hand with me then.

However, the emergence of fear also brought with it powerful feelings of impending doom and 'self'-danger. Nine women described feeling very frightened during the most intense symptom episodes.

*Annette: It was more than frightening, I tell you, honestly darling. Now, eh, I never, I never experienced anything like it.

*Deirdre: I thought I was drowning. (whisper) I jus' could not get my breath at all. Absolutely frightening. It was incredible.

Fear has been described as an emotion that characterises a perceived threat or loss of psychological control (Affleck et al 1987). As fear took hold, control of events was likely to be eroded and potentially replaced by panic. Five participants were so afraid that they spoke of their fear of dying.

> *Deirdre: I was cold and yet was in a lather of perspiration. It was incredible, I mean, I mean, I really thought I was a goner.

> *Linda: And the pain and all that, so. I didn't think I was getting outta dyin' and live through it. Now that's my thinking on it.

Fear could not be appeased by any internal/cognitive coping strategy and so became the emotional trigger that activated the decision to initiate overt coping strategies. As the individual's resources were being drained, participants looked to the external environment for replenishment. Dempsey et al (1995) describe a similar response by women when faced with fear and/or unmanageable symptoms. In her examination of women's decision-making processes during MI, she reports how women were only prepared to relinquish control of the situation when faced with a perceived threat to health. Their initial sense of control over their symptoms began to erode when their coping strategies failed to cure or lessen symptom effect. Control was quickly replaced by a sense of threat or foreboding and participants relinquished control to others.

7.3.3.2. Interpretation of Stage 3 Findings

Emotional responses to goal-related appraisal activated the formulation of new cognitive strategies or the revision of old ones. However, some emotions were also controlled or managed by women at different stages of the model and for these emotional experiences, a cognitive safety net was activated. Cognitive strategies frequently adapted to emotional responses by regulating responses to yield optimal goal-attainment opportunities. Although the majority of these strategies were performed covertly, where intense symptoms and fear ensued, the only remaining cognitive strategy was to 'seek help'.

Cameron (2003) (this is correct) suggests that there is a tendency to disregard fear as a maladaptive response to a health threat, which frequently leads to irrational and/or panic-stricken behaviour. However, fear in this context, was considered an integral part of the emotional system, described by Cameron (2003) as an evolved adaptive set of mechanisms for promoting optimum survival benefits. In the pursuit and maintenance of life, fear alters perceptual, cognitive and behavioural responses to achieve the best survival outcome (Mayne 1999). In the context of this study, I believe that fear played a crucial role in motivating cognitive responses to find meaning within the situation and eventually seek out life-saving health care. Cognitive and emotional triggers were instrumental in assigning a new and

threatening meaning to symptoms and stage 3 was eventually abandoned for the safety of stage 4.

7.3.4. Seeking Safety →Stage 4 of Model

The fourth theme emerging from the study findings 'Seeking Safety' became stage four of the Woman's Heart Model (see appendix XX) and is characterised by overt coping behaviour. In stage 4, participants sought the comfort, safety and support of significant others and medical experts. Having re-labelled their symptoms as a potential threat to health, many women realised that covert coping strategies had failed and that others needed to be included in any further decision-making processes. The lay-consultant was an extremely important resource for all twelve participants, as these significant others expedited the call for medical assistance. Although transferring control to others advanced help-seeking initiatives, many women, even in the midst of acute symptomology, were reluctant to relinquish total control. Eventually, all participants chose the safest option and sought medical care.

7.3.4.1. Sub-theme: Cognitive and Emotional Responses

As with the other three stages, in 'seeking safety' cognitive and emotional responses paralleled each other and worked in tandem to achieve the most beneficial outcome. Cameron and Leventhal (1995) suggest that when negative emotions become too high or the health threat is perceived as unmanageable, then the cognitive appeasement of emotion dominates the situation. Similarly, within this context, as fear became the trigger which initiated overt coping measures, immediate fear-control was sought from the close external environment in the form of family and/or friends. Feelings of vulnerability emerged with fear and all participants felt a very strong need for safety and the support of others.

> *Breda: Because I was beginning to get into a bit of a panic. I didn't know what it was. And why I felt like that. And I just felt I have to have somebody there.
>
> *Una: But to me there was this need to have somebody there.

- **Influences of family/friends**

On perceiving a threat to health, all participants first contacted a family member or close friend. Emotional support from these 'significant-others' helped to contain fear and feelings of vulnerability and so these initial lay contacts became an extremely important aspect of the decision making process for all participants. They supported and validated the help-seeking behaviour, provided emotional support and many times took control of the situation. Initial lay contacts consisted of daughters (4), female friends (4), husbands (2), husband and daughter (1) and husband and son (1). For many women, handing control to others ensured that control could be maintained, albeit in an overt fashion. In this way, fear was contained and

prevented from turning into panic. Feelings of vulnerability were appeased and help-seeking decision-making advanced.

> *Lara: Then she (daughter) made me go down to the doctor's. I mean I have to be honest. If I'd have been in the house on me own, no I wouldn't have gone to hospital.

Pattenden et al (2002) report similar findings and suggest that the presence of others positively influenced the decision-making process during acute symptom onset. Other studies, although highlighting the supportive role provided by close family and friends, suggest that patients' delay times were unaffected by the presence of others (Reilly et al 1994, Dracup et al 1997). Conversely, in the present study, lay consultation not only validated symptom interpretation and illness behaviour, but for many participants appeared to expedite the decision-making process.

> *Annette: When I said it to my son he says, no, get the ambulance. I got him to call the ambulance. He done everything for me.

As well as providing emotional support, friends and family were used as sounding boards or measuring sticks against which all participants evaluated their help-seeking behaviour. Validation was sought to confirm that behaviour was both acceptable and within societal norms. No participant sought expert help without first seeking this lay validation. In essence, permission was being sought to seek medical intervention.

> *Annie: I went into my husband who was in the sitting room reading the paper. And I just says to him I think I need to go to the hospital, I don't feel well. And I sat down on the couch and he said, 'well we better do something about that.'

Similarly, Holliday et al (2000) describe how participants sought support from significant others who were influential in expediting the call for help. Dempsey et al (1995) report similar findings in their examination of decision-making processes of women with MI and describe how all sixteen of her female participants also sought lay consultation before seeking expert help.

> *Annette: And I felt that I just wanted to die. I didn't, I couldn't get my breath. I felt very very nervous. I just said, I said it to my husband, I'll just, I can't breathe, I just want to die.

Alonzo (1986) report similar findings in their quantitative study examining the impact of family/friends on care-seeking during life-threatening situations. They suggest that from a sample of 1102 patients, 93% consulted others before seeking expert treatment and that

these significant others had a positive impact on delay times. However, although seeking permission from family and/or friends, many women in the present study were reluctant to transfer *total* control to others for fear of losing 'sense of self'. Even when initiating overt coping behaviours, there remained a reluctance to 'give in' unconditionally to the condition.

> *Una: She said 'Call the doctor' and I said 'I'm not calling the doctor'. And she said 'Well, I'll call the doctor'. And I said 'You will not call my doctor'. After some argument, I agreed that I would ring the doctor in half an hour if the pain didn't subside.

> *Breda: My friend said like, what if I'd do that (call the ambulance)? I'd said please don't call them out, just let me beat this.

Others maintained a semblance of control by instructing others in their role and in doing so expedited appropriate help-seeking behaviour.

> *Annette: I got him to call the ambulance.

> *Deirdre: I don't think things are quite right, I said come down in the car with me and I'll go into the hospital.

- **Calling for expert help**

Only after seeking lay validation and permission, did participants seek expert opinion. Some women contacted their General Practitioner (GP) on the advice of family and friends, whilst others used the GP as additional confirmation of appropriate lay decision-making. For some women, seeking and obtaining this validation corroborated behaviour and provided the definitive expert permission to call an ambulance or attend the A&E department.

> *Annette: Anyway, he (GP) came up to me and he rang the ambulance.

> *Una: And then when I rang the doctor and they sounded quite afraid and were very emphatic that I should go to the hospital. I thought right, this is not the time to start messing about. And that was when I phoned my brother.

One participant, in a bid to maintain control of the situation, disregarded advice given to her by her GP, until it suited her needs.

> *Patricia: He (GP) says 'you go up to the outpatients and have the blood tests'. He said, 'if you're free this evening, go up'. I said, 'I'm not going to an outpatient

department in the evening', you know (laugh) hey, what's the story here like. I said I'd go up in the morning, which I did.

However, for many others, this 'expert' validation was perceived as unobtainable. Social messages regarding the availability of 'out of hours' GP services discouraged many from making this initial contact. Many women felt that their GP wouldn't come out to see them at night-time or at weekends.

* Annie: I didn't go ringing my GP 'cause he only has an hour surgery by private appointment. It was on a Saturday.

*Linda: No. You wouldn't get him. No, you know, you'd never get him at night time.

Others felt that their symptoms were trivialised by their GP or had the potential of being so treated.

*Pauline: The GP said 'put her on the bus and send her down', was the reaction they (family) got. That was the reaction they got. So, eh, they had to fight with him, but they got a doctor up.

*Rebecca: I would try and get one to come to me. But the GPs nowadays, ehm, when you're dying, they say can you come down? (laugh)

For the six women who arrived to hospital by ambulance, the decision to use this service was made by others, in particular family/friends (5) and GP (1). Annie was also positively influenced by previous MI experiences and medical/nursing advice.

*Annie: Go, we'll go to the hospital. And he (husband) knew the quickest way of getting there because I'd been to it before, in an ambulance... So it'd happened before, they (healthcare staff) had said that sure, you don't wait, get an ambulance.

Similarly, Meischke et al (1995b) in their examination of ambulance usage during MI, suggest that the presence of others was critical to the implementation of deliberative and positive coping strategies. Further investigation highlighted that 'others' were more likely to call an ambulance during MI than the patient her/himself (88% versus 12%). Although other participants in the present study were encouraged by family/friends (3), societal messages regarding ambulance usage frequently delayed this decision-making process or acted as a deterrent to this help-seeking initiative.

*Pauline: And my husband wanted to get an ambulance and I stopped him. I said, 'no it'll go'.

*Linda: I didn't want to call an ambulance? Again, with (pause) that is fuss so, I hate fuss. I really do.

An example of societal messages regarding ambulance usage is illustrated in the advice available to the public from www.irishhealth.com. This website, which is specifically designed with the public in mind, provides guidelines for appropriate use of the ambulance service. However, although aiming to inform the lay-public, the advice provided illustrates the difficulty some participants may have had when struggling with the decision whether or not to use the ambulance service.

> 'Ambulance services are provided by health boards to transport people who are seriously ill to hospital. There is no absolute right to an ambulance service. It is up to a doctor to decide if an ambulance is needed in the case of a non-emergency. You may be charged for using an ambulance service if you do not have a medical card'
>
> (www.irishhealth.com 2004)

This type of advice assumes that the individual has the knowledge, experience and confidence to recognise an 'emergency' from a 'non-emergency' health situation. Moreover, it also assumes that the individual will be confident enough to make that decision for her/himself and can afford to do so if not in possession of a medical card. As well as weighing up the cost and benefits of calling an ambulance for a serious health-threat, the individual also has to weigh up the likely social cost of calling an ambulance inappropriately. The potential embarrassment and guilt associated with inappropriate use of the service may have dissuaded earlier service use.

Meischke et al (1995b) in a study of ambulance usage by patients with MI, report similar findings and suggest that barriers to calling an ambulance included concerns related to embarrassment, efficiency and cost. They add that the most frequently cited reason for not using this service was associated with the labelling of the illness threat. Many believed that symptoms would go away or were not severe enough to warrant an ambulance. Furthermore, the belief that one was experiencing a heart attack was positively associated with greater and quicker utilisation of ambulance services. The attribution of symptoms to a non-cardiac origin meant that for many participants in the present study, the use of ambulance was not considered. Once again, the labelling of a health threat was seen to influence greatly the subsequent coping responses.

*Cathrina: I didn't think it was an ambulance job.

*Lara: 'Cause I didn't think it was that serious, I didn't think I'd bother them (the ambulance crew).

Cathrina and Una describe the impact of social roles on behaviour associated with ambulance usage and the additional delays that these responsibilities may have caused.

*Una: In the middle of it all I decided to wash me toilet just in case I go (laugh). I thought that if, I can't let anybody (ambulance men) walk into this flat's condition!

*Cathrina: My Mam was up with me. She came up to my house and I didn't want to alarm her. To be arriving up an ambulance with blue lights. Oh my God, give her another (laugh) heart attack. It really would. So, that's why, I didn't want to, to worry her either.

- **Decision to Attend A&E**

Likewise, social messages regarding protracted waiting times in A&E departments discouraged early A&E attendance. An example of such messages occurred during the four-month interview period, when The Irish Examiner reported that the A&E department of one Dublin MATHS was 'out of control, unsafe and a risk to life' (Collins 2003). Additionally, in January 2004, in response to over-crowding in A&E departments, the Eastern Regional Health Authority issued an appeal to members of the public to stay away from A&E departments, unless seriously ill or injured (Bowers 2004). As a result of these and similar frequent reports of A&E delays, many women chose to remain in the comfort of their own homes, where they could continue to administer self-treatments.

*Pauline: And I said no. You'd be in Casualty for hours...which you are, you know that yourself, in any hospital you go to. And eh, leave it, leave it, I just kept saying, no, it'll go, it'll go in a while.

*Una: I mean, I've heard so many horror stories, that people, I meant to say, there were people lying in the corridors, 'cause they've nowhere to put them.

*Mary: The last time there in July, I was 2 days, nearly 3 days on the trolley.

However, despite the many social messages dissuading early A&E attendance, when fear emerged, it could only be appeased by seeking medical help in hospital. Eventually, the home no longer felt safe for many women, as they feared imminent self-danger if they remained.

*Annie: I said, oh please God let me get to the hospital, that they'd do something for me. I started to say prayers and everything.

*Annette: Because I was frightened and I, I knew meself I wanted to go to hospital. I was safe coming here.

Even when faced with fear, all participants sought the advice of others before proceeding to hospital. Family and friends continued to encourage, support and validate help-seeking decision-making.

*Linda: I, well eventually I jumped into the car, because I knew I would be dead if I didn't go. And I got in, said to my husband 'go quick as fast as you can, 'cause I'm going to die'.

*Una: And I just thought, oh (whisper) God, I can't be handling this. Ring Seamus, he knows all about it, he'll call. I also felt I wanted support.

Participants were actually surprised when their waiting times in A&E were short and that they were seen to expeditiously. Many were unaware that their presenting condition would afford them immediate attention in the A&E department.

*Annette: Well, normally when you go in there is always crowds in Casualty. But I think it was because it was heart they did it immediately. I wasn't, I wasn't, expecting it (to be seen that quickly) definitely.

*Deirdre: And I must say the treatment there (in A&E), gosh, they were incredible. Very, very fast.

7.3.4.2. Interpretation of Stage 4 Findings

Rather than relinquishing control as suggested by Dempsey et al (1995), the initiation of overt coping strategies in the present study was seen as the most adaptive method of maintaining control of a potentially life-threatening situation. Moreover, by inviting others into the decision-making process, participants optimised their survival opportunities. The presence of others, especially close family or friends, was crucial to the advancement of life-saving help-seeking behaviour. Many appeared to influence the rate of ambulance usage positively by instigating this behaviour directly or encouraging this behaviour in reluctant participants. Although expediting the help-seeking decision-making process, on many occasions the influence of others came at an advanced stage of symptom onset. Fear, whilst an adaptive response to imminent danger and successful in instigating overt coping strategies, failed to provide participants with an early enough warning system. Waiting until fear took hold meant that for

many participants, the window of optimum therapeutic benefit had long closed. For the six women who were not contra-indicated to receive thrombolysis, only one participant reached hospital within the desired six hours and subsequently only one participant availed of this treatment.

7.4. The Woman's Heart Self-Regulation Model of Behaviour

Mc Ewen (2002) suggests that models may be theoretical (something not directly observable) or empirical (replicas of observable reality) and describes them as

> 'graphic or symbolic representation of phenomena, that objectify and present certain perspectives or points of view about nature or function or both.'
>
> (Mc Ewen 2002: 27)

As previously outlined, the Woman's Heart Model (WHM) was developed from the findings of the in-depth interviews and as such, is a graphical representation of the shared pre-hospital experiences of twelve women (to view the various stages of model development please see appendix XXI). This model displays the research findings within a self-regulatory process, which illustrates the conscious and perhaps sometimes subconscious effort by women, to modify emotions, thoughts and physical behaviour in order to achieve health-related goals. Motivation to control/cure the health-imbalance was considered the driving feature of the findings and hence the model, where behaviours and strategies to obtain goals were developed, with feedback loops enabling continuous appraisal of progress and strategies. The model demonstrates the non-static nature of this self-regulatory process, which appeared to operate dynamically within the individually changing health-status situation and within a larger social environment. In the model, the four themes, Seeking Understanding, Seeking Sense of Self, Seeking Meaning and Seeking Safety are presented not in a linear fashion, but rather in the dialectical relationship within which they exist.

7.4.1. Theoretical Origins

The Woman's Heart Model (WHM) is considered a self-regulatory model of health behaviour, which draws from the many constructs of feminist theory as well as those from the general behaviourist theories of motivation (Maslow 1943) and social cognition (Bandura 1997). There are numerous interpretations of the self-regulation construct and differences in philosophical orientations are clearly evident in the literature. The origins of the self-regulation theory of behaviour are often traced to the development of cybernetic or control theory in the 1940s and further developed by Carver & Scheier (1981). The cybernetic model, which is based on the workings of a machine, suggests that a feedback loop is the chief mechanism of control, for both machine and person. This mechanistic analogy begins with a reference value (norm) against which the final outcome is measured (Carver & Scheier 1981). Following the performance of an action, a sensor (comparator) notes any deviation from the standard

initially set. Any discrepancy between the desired and actual outcome activates a new mechanistic action, which is designed to minimise any further deviations from the standard.

Although some theoretical analogies have been made between the mechanics of cybernetics and the regulation of human behaviour (Caver & Scheier 1981, Cameron & Leventhal 2003), the comparison of machine to human being is rejected in this discussion. Firstly, I consider that human behaviour is vastly more complex than a machine that has been made by humans and secondly I conceive it as impossible to be self-regulated in all areas of human behaviour. However, as many contemporary self-regulatory theorists continue to use this analogy (Carver & Scheier 1981, Miller et al 1996, Cameron & Levanthal 2003), cursory reference to this imagery shall be made for comparative purposes only.

The concept of self-regulation, from which the WHM draws, is one that belongs clearly within the framework of social cognitive theory (Bandura 1977, 1986, 1989; Schunk 1991). In the 1960s, social researchers interpreted self-regulation as a socialisation, rather than a mechanistic process of behaviourist stimulus-response techniques (Bandura & Walters 1963). Behaviour was considered a dynamic process that depended on aspects of the person and the environment, all of which influenced each other simultaneously. Behaviour was not depicted as a mere product of the person and environment, nor the environment a product of the person and behaviour. Rather, Bandura (1977) suggests that all three components constantly influence each other and a change in one has implications for the others. A theory of 'triadic reciprocal determinism' was proposed (Bandura 1977, 1986) in which personal, environmental and behavioural factors interacted to allow the individual to regulate her/his own life. This theory was later extended to include a goal/ expectation focused aspect, which provided the motivational stimulus to the self-regulation of behaviour.

7.4.2. Common Themes

Self-regulatory models, whether mechanistically or socially construed, have been used for many years in the areas of social and personality psychology; however, their use in health care is a more recent occurrence. To this end, an array of self-regulation models for the study of health-related behaviours has been developed and although differing in context and design, share some basic properties (Cameron & Leventhal 2003). These common properties or themes include a goal-focused behaviour with the existence of a feedback mechanism and the integration of cognitive and emotional processes.

- **Goal-focused Behaviour**

Goal directed behaviour is not a new concept, but rather has emerged as a central theme for many behaviour and personality theorists (Pervin 1982, Higgins 1987, Bandura 1997, Carver & Scheier 1998). Common to all these theorists, is the belief that goals instigate and energise behaviour and that goals give meaning and purpose to people's lives (Pervin 1982). In

labelling it self-regulatory in nature, the WHM (and other comparative models) considers health behaviour to be a systematic process involving conscious and sub-conscious efforts by the individual, to control emotions, thoughts and actions in order to achieve health–related goals within a continuously changing health situation. Rather than being static, I consider the WHM to reflect a dynamic motivational process in which goals are set and strategies devised to achieve these goals. Fundamental to this process, is a gendered 'illness prototype' against which the individual compares her present health state and social norms against which she measures behaviour acceptability. Feedback loops within the self-regulatory cycle ensures that the individual continually appraises her progress as well as the success or failure of goal attainment strategies. Miller & Pribram (1960) describe this process in mechanistic terms and suggest that this TOTE (test, operate, text, exit) unit is an integral component of every self-regulatory model.

- **Cognitive & Emotional Processes**

Within the WHM, women used information from their semantic and episodic memories to assist them in understanding their health condition and their perceived risk of a health threat. The distinction between concrete experiential processes and abstract perceptual processes is also highlighted as a key theme in other self-regulating models of health behaviour (Epstein 1994, Brownlee et al, Leventhal et al 2001). Framing each stage of the WHM (seeking understanding, seeking sense of self, seeking meaning and seeking safety), is the integration of emotional and cognitive factors, which work in combination with each other to enhance goal attainment opportunities. Emotions were seen as a pivotal part of this process, as they were crucial in directing initial and ongoing goal-seeking strategies. Emotional responses to visceral symptom onset provided the impetus for 'seeking understanding' and so greatly influenced subsequent cognitive and behavioural initiatives. Emotional responses to goal-related appraisal also activated the formulation of new cognitive strategies or the revision of old ones. However, some emotions were also controlled or managed by women at different stages of the cascade and for these emotional experiences a cognitive safety net was activated. Cognitive strategies frequently adapted to emotional responses by regulating responses to yield optimal goal-attainment opportunities. The integration of emotional and cognitive processes in the attainment of goals is a common and fundamental feature to many self-regulatory theories (Epstein 1994, Miller et al 1996, Carver and Scheier 1998, Kuhl 2000, Leventhal et al 2001) whilst explicitly defined emotion and problem focused goals have been identified in Leventhal's Common-Sense Model (Leventhal et al 1980), Lazarus and Folkman's stress-coping model (Lazarus & Folkman 1984) and Maes & Gebhardt's Health Behaviour Goal Model (Maes & Gebhardt 2000).

7.4.3. Divergent Themes

Beyond these common themes, self-regulation models diverge in relation to their context and area of potential clinical application. Most obvious of these differences is the relative importance accorded to motivation, the self and the influence of external or environmental influences on an individual's capacity to be behaviourally self-regulating.

- **Motivation**

Although self-regulation models of behaviour have been described as dynamic motivational systems of goal setting and achieving (Cameron & Leventhal 2003), few models explain why the individual is initially motivated to set goals in the first instance. Scheier & Carvin (1996) suggest that individuals possess two over-arching goals, which include survival and a sense of coherence in one's sense of self. Although frequently unaware of these desires, illness experiences may serve to threaten these life-goals and so present critical challenges to the individual's self-regulation abilities. Likewise, in the WHM, two of the main themes emerging from the qualitative analysis included the desire to seek sense of self and the desire to seek safety from danger.

To explain why the individual is motivated to set and achieve these and other health-related goals, the WHM draws from some of the constructs of Maslow's (1943) Needs Theory of Motivation. In this theory, Maslow (1943) outlines a hierarchy of needs, which acts as a motivator of behaviour until needs are satisfied. Within this hierarchy, he describes physiological needs as the most basic need, followed by the need for safety and love. These basic needs seem to originate from primal desires for food, water, shelter, safety from danger and socialisation within a group. Once the basic needs have been met, Maslow (1943) suggests that they no longer act as motivators. However, only when the most basic needs are met entirely, can the higher needs be fully satisfied. The higher motivational needs include self-esteem and finally self-actualisation. Maslow (1943) describes how the satisfaction of the self-esteem need, leads to feelings of contentment, self-confidence, self-worth, as well as the feelings of strength and ability to lead the life which one has desired. In satisfying the need for self-actualisation, Maslow (1943) suggests that the individual feels self fulfilled having reached her/his full potential in one or many areas of life.

When applied to the WHM, the onset of symptoms, be they prodromal or intense in nature, stimulate a need to understand the meaning of the situation. Maslow (1943) suggests that the need for understanding and meaning are higher needs, which are integrated within self-esteem and self-actualisation needs. The presence of a symptom of ill-health threatens the self-esteem feelings of confidence, contentment and strength. This symptom may simply unsettle self-esteem feelings at first and motivate behaviour towards understanding the experience and restoring balance. The individual attempts to maintain a sense of normality or self by controlling the environment and by establishing meaning. However, when symptoms

become intense and the 'sense of self' unstable, the individual experiences feelings of danger and fear. The environment is deemed unsafe and the individual is motivated to seek safety elsewhere. The overwhelming need at this point is one of safety and the desire to understand the meaning of the situation is abandoned until the person has satisfied this most basic need. As such, I believe that establishing why an individual is first motivated to set health-related goals is crucial in understanding the cognitive, emotional and behavioural patterns that evolve throughout the course of an illness experience. Maslow's (1943) hierarchy of needs provides a useful framework for understanding the motivation behind such goal-focused behaviour.

- **The Environment**

Although many self-regulation models acknowledge the contribution of society to the self-regulation of behaviour, personal and internal processes tend to be viewed as the primary processes (Leventhal et al 1984, Jackson et al 2000). However, the WHM whilst drawing from the social cognitive construct of 'triadic reciprocal determinism' illustrates how the regulation of behaviour is also dependent on the socio-cultural environment within which the self resides. Giger & Davidhizar (1999) describe the socio-cultural environment as a meta-communication system that is based on abstract traits such as values, attitudes, beliefs, customs, language and behaviour that a group of people share. These non-physical traits are considered to impact on every stage of the WHM as health beliefs and practices arising from normative or collective social values interact with the individual's unique experiences of health and illness. Therefore, aspects of the WHM, such as prevailing gendered illness prototypes, development of goals, choice of coping strategies, reference values for appraising efforts and emotional regulation are best understood when examined within the social context.

Feminist theory highlights how socio-cultural factors particularly impact on the identity of the self, as each one of us depends on the validation of others for our ongoing security (Jenkins 1996). In seeking understanding, sense of self, meaning and safety, the identity and location of the self within the wider socio-political environment determines initial interpretation and subsequent coping initiatives. The social self can be described in its most basic terms by the gender ascribed to it by society (Lorber 1997). The 'transformation of the body through gendered social practices', (Lorber 1997: 3) describes how girls and boys are taught from birth, to act in a certain way and are provided with stereotypical role models from whom they can learn their society's gendered roles (Lorber 1997). As previously mentioned, (see section 2.2) women and men are frequently viewed as having different responsibilities, different rights, different rewards as well as different roles in society (French 1985). Because gender is embedded in the major social fabrics of life and living, such as family, politics, legal and medical systems, it greatly determines how women and men are treated in all aspects of life, including health and illness. The WHM therefore recognises that the lives women lead have a strong impact on health and illness, through economic circumstances, societal ascribed

gendered roles, lifestyle choices/opportunities as well as social interaction with family and health professionals.

- **The Self as Woman**

Scheier & Carver (2001) suggest that understanding the person means understanding her goals first; however, in the WHM the opposite applies. It is considered that only by firstly understanding the person, can the meaning of an individual's goals emerge. Jenkins (1996) suggests that the self is altogether individual and intrinsically social; however, although all self-regulation theorists include the word 'self' in their models, few connect the self-regulatory dynamics of their models with the more general self-system (Contrada & Ashmore 1999). The role of the self-system in the self-regulation of behaviour has been the subject of considerable theory building and research (Kanfer, 1970, Bandura, 1986, 1989, Carver & Scheier, 1982, 1990, Harter 1986, Cross & Markus, 1990). Conceptualisations of the 'self' help to determine behaviour (Raynor & McFarlin 1986) and how this behaviour may be sustained in the accomplishment of desired goals (Kuhl 1984, Cross & Markus 1990). Cross & Markus (1990) contend that individuals claim a particular behavioural domain as self-relevant or self-identifying and only by truly knowing the individual can the self-regulation process be fully understood.

Feminist theory helps to explain how the social norms that endorse acceptable gendered roles and behaviours, also influence the formation of the individual's subjective identity. In the Woman's Heart Model (WHM), an understanding of the 'self as woman' is critical to understanding the health behaviour of the twelve participants. Although it is acknowledged that women are different to each other in many ways such as wealth, education, culture and sexuality, the sheer fact of being female within a patriarchal society ensures that women will share certain experiences. 'Self as woman' describes a socially constructed being, with socially ascribed responsibilities, roles, value and expectations. The definition of 'self' as woman, is clearly delineated in patriarchal societies such as Ireland (see section 2.2). Patriarchy maintains a firm grip on the self-regulation process, in so much as it directs definitions of the self, through the perpetuation of gendered social roles. Evidence of such prevailing ideology is found in Article 41.2 of the Irish Constitution (Government of Ireland 1937), which clearly places the mother within the confines of the family home and encourages women to identify the 'self' through others i.e. husband and children. Developing one's identity through others, influences the value placed on the 'self as woman' when comparing self to 'other as man'. However, even when entering the labour market, women continue to perform their traditionally ascribed gendered roles as mothers, wives and carers (Women's Health Council 2003). The devaluing of 'self as woman' together with the responsibility of multiple and competing roles, may lead 'self as woman' to neglect or dismiss her own health concerns over those of others.

'Self as woman' ensures that for the majority of Irish women, financial rewards and access to health enhancing resources and opportunities will be far less than those experienced by men (see section 2.2). Chapter 2 further demonstrates how 'self as woman' is associated with an increased risk of poverty and disadvantage when compared to men and how 'self as woman' means less opportunity to live a happy and healthy life than Irish men. With the gendering of MI, the image of a male heart attack victim portrayed by medicine and the media will ensure that 'self as woman' continues to underestimate personal risk for heart disease. The inappropriate use of the male normative frame and associated illness parameters, mean that 'self as woman' will always dismiss 'atypical' or prodromal symptoms as insignificant. Society will continue to hold the male heart attack victim in its illness prototype and 'self as woman' will continue to feed from societal messages. 'Self as woman' dictates how goals are set, how coping is initiated and how support is obtained. Finally, 'self as woman' infiltrates all feedback loops and establishes success or failure of coping strategies. Hence, this unique experience of 'self as woman' within the family, society, politics and cardiovascular health, influences all stages of the WHM.

- **Self-efficacy**

The self-control construct within social cognitive theory, has many sub-components including monitoring of one's behaviour and the comparison of behaviour to perceived normal standards as well as self-set goals. Understanding the location and experience of the 'self', provides some contextual insights into the internal/external environments of the self, within which self-regulation behaviour is performed. Further insights may be obtained by examining how confident the self is, in the ability to self-treat and achieve control of symptoms and emotions. Social cognitive theory has emphasised the role of self-efficacy in the context-specific self-regulation process, describing it as a reciprocal process that determines behaviour (Bandura 1999). According to Bandura (1999) the degree of self-confidence in the ability to achieve a specific goal, greatly affects an individual's motivation and behaviour. He suggests that this confidence comes from the continuous interaction of personal, behavioural and social factors, which provides the individual with the knowledge, desire and permission to manage her own care.

In social cognitive theory, an individual continually draws on her own knowledge, feelings and experiences, receives medical and social messages and then tries out a strategy. She will then appraise the effectiveness of this action and if deemed successful may repeat the action when a similar health concern arises. Successful self-treatments not only achieve the health-related goal, but they also serve to increase the person's self-belief (self-efficacy) in self-treatment. The relationship between the many components of the self-regulation model, in particular that between goal-focused behaviour, self-efficacy and self-evaluative feedback mechanisms has been previously demonstrated (Bandura 1986, Cervone & Peake 1986, Mento et al 1987). The findings from such research suggest that goal systems are not only

supported but strengthened by self-evaluative and self-efficacy procedures. Accordingly, many self-regulation models now incorporate some component of self-efficacy (e.g Brownlee et al 2000) to understand or predict goal-focused behaviours.

7.5. Using the Woman's Heart Model to Understand Women's Cardiac Health Care

As previously outlined (see section 2.3.5), many researchers investigating decision making or behavioural processes of individuals experiencing MI symptoms have used a behavioural model to support their findings. The most frequently employed model appears to be the Common Sense Self Regulatory Model (Leventhal et al 1980). Some researchers have examined decision-making or behavioural processes amongst women alone (Dempsey et al 1995, Meischke et al 1999, Holliday et al 2000) whilst others have concentrated their inquiry on women and men (Meischke et al 1995a, Dracup et al 1995, Alonzo & Reynolds 1997, Foster and Mallick 1998, McKinley et al 2000). Although the Common Sense Model (CSM) and WHM models diverge on some theoretical issues they also have many commonalities. In the formulation of a new model of self-regulation, I felt that it was prudent to examine firstly how self-regulation has been previously used to explain MI health behaviour and how these two models may compare. Secondly, although confirming common aspects with the CSM, the WHM through its divergence, also extends and develops the construct of self-regulation. It was therefore considered important to examine how these two models may complement each other also and how they may be self-limiting.

7.5.1. Similarities Between the CSM and WHM

As previously mentioned (see section 2.3.5), the CSM consists of a 3-staged model regulating behaviour during an illness experience: (1) mental representation of the health threat (2) development of coping strategies and (3) a (re)-appraisal stage. The mental representation describes how the person identifies the threat to her/his personal health by retrieving stored information in episodic and semantic memory files. Leventhal et al (1980) suggest that this representation has five key domains: identity, cause, timeline, consequences and control/cure. On the basis of the named mental representation, the individual devises an action plan to cope with the illness experience. Through a series of appraisals and re-appraisals of the situation, action plans may change over time. The CSM also consists of a parallel process where emotion and cognition interact to manage the potential threat to health.

The CSM and WHM share the common themes of goal-focused behaviour, the existence of a feedback mechanism and the integration of cognitive and emotional processes. The CSM also acknowledges the contribution of the self and society to self-regulation; however, internal processes tend to be viewed as the primary processes (Leventhal et al 1984). Both models also acknowledge the importance of episodic and semantic memory sources of information

retrieval. The CSM extends this theme by identifying associated key domains whilst the WHM includes symptoms as a separate component of illness representation. The CSM has been widely accepted as a plausible framework for understanding the processes involved in the decision to seek emergency help for symptoms of MI (Meischke et al 1995a, Dracup et al 1995, Alonzo & Reynolds 1997, Foster and Mallick 1998, Holliday et al 2000) and as such has been instrumental in substantially increasing the knowledge base to this area of care.

7.5.2. Limitations of the CSM

Whilst the use of the CSM is obviously widespread, some researchers have failed to use or even refer to this model (Miller 2000, Pattenden et al 2002) have supplemented it with constructs from other models (Dracup et al 1995, Teel et al 1997) have criticised its failure to explain decision-making processes amongst women with MI adequately (Meischke et al 1995a) or to explain the paradox of greater delays in repeated illness experiences (Dempsey et al 1995). Dempsey et al (1995) suggest that although useful in explaining the beliefs that cardiac patients bring to the decision-making process, the CSM provides minimal insights into the decision-making process itself. The WHM compensates for this by emphasising the importance of the identity and location of 'self' within self-regulation and by explaining the motivation behind goal setting and subsequent decision-making processes.

The CSM was also criticised for failing to distinguish between women who delayed and those that did not, whilst also assuming that individuals expend a great deal of mental effort in balancing costs and benefits of subsequent decisions (Meischke et al 1995b). In reality Dempsey et al (1995) found that rather than focus on costs and benefits of seeking care, women were more focused on the emotions related to maintaining or relinquishing control of the experience. In contrast, the WHM, by focusing on the 'self' and its location and identity within the self-regulation construct, offers greater insights into the illness experience of 'self as woman'. Although it is acknowledged that rather than being an homogenous group, many differences and inequalities exist between women, their collective location and identity within a patriarchal society means that certain experiences will be shared. The WHM recognises the gendered stereotypical prototypes against which 'self as woman' measures and regulates her health and illness behaviours.

The CSM has also been criticised for its failure to explain adequately the paradox of greater delays in patients experiencing a repeated illness-experience. Based on the CSM, in which a previous experience with the same condition (episodic memory) influences the labelling of a subsequent health threat, one might predict that the ability to label correctly an illness experience to a cardiac cause may be easier and quicker with each repeated illness episode (Dempsey et al 1995). However, many researchers have found the contrary to be true (Turi et al 1986, Goldberg et al 1992). Teel et al (1997) suggests that while the CSM highlights

experience with a symptom as a key factor in illness representation, it fails to address adequately the representation and reasoning that occurs in symptom interpretation. Teel et al (1997) add that only by truly understanding these aspects of symptom interpretation can we begin to appreciate the difficulties patients face with labelling the overall illness representation.

The WHM, in its first theme, seeking understanding, highlights the existence of different types of symptoms that the individual may encounter and the struggle within which the self attempts to reason or understand the situation. The presence of prodromal symptoms, which are not represented in prevailing illness prototypes, means that the individual is faced with a choice of either dismissing symptoms as insignificant or accepting the presence of the symptom through normalisation efforts. The presence of more intense yet 'atypical' symptoms creates confusion and is a cause of distress when attempting to match signs and symptoms to a prevailing illness prototype. The mismatch of experienced and expected symptoms whether in the first or subsequent MIs is a common occurrence, yet the unsuspecting and trusting 'self' relies on medical and social messages to update illness prototypes. An understanding of these symptoms from the perspective of the person enhances understanding of the variation in response to particular symptoms.

Where the CSM has failed to address certain behavioural issues adequately, the WHM appears to succeed. Although acknowledging the importance of society and the self, the CSM fails to include important aspects of this relationship. Dracup et al (1995) used the CSM to explain treatment-seeking behaviour of patients with MI; however, they needed to supplement this model with the inclusion of interactionist role theory, in order to explain the role of significant others. The need to include the role of others into any theoretical discussion of delay is emphasised by numerous past findings that the majority of patients with MI consult significant others prior to seeking expert treatment (Alonzo et al 1986, Dempsey et al 1995, Halliday et al 2000, Pattenden et al 2002).

In emphasising the triadic relationship of person, environment and behaviour, the WHM brings the self, society and behaviour to the fore. Each is considered a crucial and equal element in the self-regulation process with each influencing the other components of the triad. In the WHM, an understanding of the relationship between these three components is considered crucial to understanding self-regulation itself. Although the word 'self' is used to describe the self-regulation construct, the WHM acknowledges that the self and society are mutually dependent on one another for the validation of the other's existence.

7.5.3. Limitations of the WHM

The WHM is a new model and unlike the CSM has not been subject to widespread use or critique. Unlike the CSM, it has never stimulated research (Cameron & Leventhal 2003) nor

received support for the construct and discriminant validity of its dimensions (Hagger & Orbell 2003). The WHM is context driven and based on the qualitative findings of twelve women with myocardial infarction. It is unclear, therefore, whether the constructs of this model can be transferred to explaining the behaviour of other women with MI, especially those in different geographical areas, different age categories and in different socio-cultural environments. Indeed, it is also unclear whether the constructs of this model are restricted to explaining the self-regulation process of women with MI, or whether they may extend to men with MI also.

7.6. Conclusion:

The rich data yielded from in-depth interviews showed that the pre-hospital experiences of twelve individual participants, although contextually diverse, contained a range of behaviours that appeared to be shared. Emerging from the findings were four main themes (1) Seeking Understanding (2) Seeking Sense of Self (3) Seeking Meaning and (4) Seeking Safety, however, rather than presenting in a linear fashion, these four themes appeared to co-exist in a dialectical relationship. The self-regulation Woman's Heart Model of help-seeking behaviour was developed and a diagrammatical representation of this framework displays the four main stages and a network of associated feed back loops. The WHM, whilst drawing from theories of motivation, social cognition and feminism, emphasises the triadic relationship between 'person, environment and behaviour' and the motivational processes behind the self-regulation process. In so doing, the WHM not only confirms previously held beliefs about the self-regulation process, but also extends and develops this construct.

The Common Sense Model of self-regulation has been previously tested and widely used as a framework for understanding illness-behaviour during myocardial infarction. The understanding contributed by the CSM is, however, limited in certain aspects, the most obvious being the relative importance accorded to motivation, the self and the influence of external or environmental influences on an individual's capacity to be behaviourally self-regulating. The Woman's Heart Model, which is a new and untested model of self-regulation shares many common themes with Leventhal et al (1980) Common Sense Model. However, by drawing on the theories of feminism, social cognition and motivation, the WHM appears to expand on these shared themes to produce a model that at least complements the CSM and at best may serve to contribute significantly to our understanding of the behaviour of women with myocardial infarction.

Chapter 8

Discussion & Recommendations

8.1. Introduction: Measuring Women's Health

The main aims of this study focused on the identification and explanation of gender specific care-pathway delays existing amongst women and men with MI (see page 41); however, I consider that the wealth of data produced by the triangulation of methods, has exceeded this aim by also contributing invaluable insights into the experience of MI for Irish women. The combined quantitative and qualitative findings provided evidence that the biomedical gendering of coronary artery disease has resulted in sub-optimum treatment for women experiencing MI. Consequently Irish women seem to have taken on board this gendered illness-prototype to the detriment of their own cardiac health. They are mainly unaware of their personal risk for MI and have difficulty attributing their 'atypical' symptoms to a cardiac cause. They delay seeking treatment for this condition thus limiting their opportunities to avail of optimum therapeutic benefits. Although unexamined in this study, I believe that the assessment and treatment delays experienced by Irish women with MI, may suggest that Irish nursing and medical professionals may have also adopted the male normative frame to assess and treat female patients. It therefore appears that the cardiac health potential of one half of the Irish population is limited by the androcentric biases of traditional biomedical inquiry and practice. In this chapter, I discuss the study's findings in light of these biases that have infiltrated the social structures of gender, health and health-care. In so doing, I demonstrate how in our patriarchal society, medicine continues to hold a position of power and privilege. Finally, implications of the research findings for nursing and medical practice are outlined and recommendations put forward for future research and policy initiatives related to nursing, medicine and the health-care system.

8.2. The Social Construction of Myocardial Infarction

The combined results of both strands of the study provide evidence to support the concept of MI as a socially constructed condition. Lorber (1997) suggests that in our society,

> 'the symptoms, pains and weaknesses called illnesses are shaped by cultural and moral values, experienced through interaction with members of one's immediate social circle and visits to health care professionals and influenced by beliefs about health and illness.'
>
> (Lorber 1997:1)

These 'ailments' are then assigned a socially accepted label, accompanied by a set of appropriate illness-behaviours and categorised into stigmatised or heroic social statuses e.g. gonorrhoea is attributed a different social status than that of a fractured femur. Lorber (1997) adds that the transformation from symptom-to-diagnosis-to-social status is greatly influenced

by power differences and moral judgements. However, as well as having illnesses with different social statuses, patients and health care workers also have different social value, determined by their gender, class, ethnic origin and sexual orientation. The social worth of the person together with the social status of the illness produces different care delivery, expectations and outcomes. In patriarchal societies where the feminine is devalued and the masculine privileged, the health of men takes precedence over that of women. A hierarchy of disease is said to exist, whereby 'women's diseases' are trivialised, whilst men's diseases are afforded highest priority. Myocardial infarction as a male disease is afforded a high social status, reflected in the 'male illness prototype' described by all twelve women. However, myocardial infarction as a woman's disease is afforded a much lower status, reflected in the women's absence of knowledge about 'atypical' symptoms, as well as their low personal risk perception. Hence, the study findings suggest that myocardial infarction, as a collection of ailments and a set of appropriate illness-behaviours is socially constructed.

In previous chapters I have clarified the socially constructed nature of gender and explored some of the concepts relating to gender and health (see chapter 2). The WHM provided an explanatory framework of how women's social lives and gendered roles are intricately linked with their cardiac health status. It shows the input of society throughout each stage of the model and how societal norms and social messages, acted to confirm behaviour yet contribute to delay. 'Self as woman' was perceived within the social construct of gender, a system of social stratification and an institution that infiltrated every stage of the WHM. As such, the 'self as woman' greatly determined responses to experienced MI symptoms and as such was the key to understanding women's behaviour. Hence, the study findings confirm that gender and in this case, 'self as woman' is a major determinant of cardiac health. I therefore believe that women's cardiac health and response to cardiac symptoms must always be considered within the context of patriarchal society, where gendered roles, access to wealth and power and the impact of sexism and ageism, militate against positive cardiac health behaviour (Moss 2002).

8.3. Asking and Answering the Why Questions

Despite the current evidence and international support suggesting that health and gender are social constructs and that gender is a strong determinant of health (Krieger et al 1993, Lorber 1997), biomedical research fails to acknowledge these relationships. As previously mentioned (see section 2.3.1), research priorities are shaped by the prevailing social and political climate and as such reflect the androcentric or male-biases within our society. Women's life experiences (including cardiac health and illness) are mediated, usually in oppressive ways, by the institutions of patriarchy such as the state or the medical profession (Annandale & Clark 1996). Lorber (1994) suggests that those who benefit most from the nature of gendered roles and power inequities, strongly resist efforts to change or measure the nature of gender or its impact on health. Ignoring social determinants of health such as gender and failing to

view health and illness with a wider lens has resulted in an Irish female population, who seem unaware of their personal cardiac risk. Although an initial examination of care-pathway time-frames provided evidence of gender-specific delays in the current study, triangulating this evidence with the word 'why', produced the greatest insights into women's cardiac experience. As Krieger et al (1993) suggest;

> 'To understand and ultimately prevent inequalities in health associated with social inequalities, we must be guided by the 'why' questions of explaining population patterns not simply the 'how' questions regarding the mechanisms of disease causation.'
>
> (Krieger et al 1993: 109)

Inhorn & Whittle (2001) add that the main limitation of modern biomedical and epidemiological research is their over-whelming disinterest in this word. In sustaining their position of privilege and power (see section 2.3.1) biomedicine & epidemiology reject calls to answer important conceptual and contextual questions, regarding why ill-health occurs in certain individuals or groups of people. Nechas & Foley (1994) suggest that the underlying reason for male dominated research reflects the dominant societal values, which claim that what is valuable to medicine is valuable to society – man, not woman. They add that these views are part of the continuum of unequal gender relations that infiltrate all aspects of our social existence, whereby society values men's lives over those of women. Doyal (1995) posits that gender-biased research should come as little surprise, when we consider that it is men's lives we are made to study in history, politics and the arts – why should medicine be any different? She adds that biomedicine not only reflects discrimination against women in the wider society, but through biomedical knowledge and biased-practice, the institution of medicine serves to exacerbate and sustain these gender-divisions in society.

Binary assumptions, which have led to the construction of a positivist paradigm, which includes biomedicine as masculine and superior and all other modes of health inquiry feminine and inferior, forces the view of the world into one singular male reality (Bleier 1986). Feminist writers suggest that this rigid and myopic view of health has been nurtured and sustained by exclusionary and discriminatory tactics (Graham & Oakley 1981, Broom 1993). The maintenance of a closed-system of knowledge production by biomedicine has ensured that the social determinants of cardiac health and disease, including gender, have been neglected. In the current study, my use of triangulation within a feminist methodological framework challenged this notion of a singular reality and the very tenets upon which medicine rests and feeds. Rather than restricting the inquiry to a singular viewpoint, triangulation provided the vehicle that endorsed feminist assumptions of multiple realities in terms of health and illness experiences. The centring of women within the inquiry, together with the validation of their voiced experiences as legitimate forms of knowledge, portrayed

health not as a singular reality, but rather as an intricate matrix of social, cultural and biological determinants. By challenging the dominant biomedical model of health, feminist research deconstructs the hierarchal notion of doctor-expert and the patient as mere passive recipient. In so doing, the use of feminist research principles within the current study helped me to undermine the very premise of the prevailing closed system and the notion of medicine's monopoly and control, of the only valid health-related sources of knowledge and wisdom (Harding 1986, Lorber 1997).

8.4. Gender and Healthcare

So far, the findings of the study support the assumptions that gender is socially constructed and as such is a determinant of health. The study findings also suggest that the MI condition is also socially constructed, with the monopoly of 'validated' knowledge related to this condition in the hands of the medical profession – an institution of social control. However, if health, gender and medicine are socially constructed, then it follows that women's health-care will also reflect societal values that privilege the normative frame – men. The findings from the quantitative strand of the study describe gender-specific in-hospital delays to treatment, with greatest delays experienced by women. It is unclear from the findings why these delays occurred; however, the use of the male normative frame to guide the assessment and clinical decision-making processes for women with MI, may have contributed to these treatment delays. If true, then care-delivery is a product of socially structured norms, where women's diseases are considered less important and less worthy of in-depth inquiry than that of men. As such, the results of inquiry into men's diseases may form the basis of care delivery to both women and men. Nurses and doctors who practice men's health on women, may unwittingly compromise care and potentially endanger women's lives. Gender can then be perceived as a major determinant of optimum cardiac healthcare.

However, the potential for gender-biased care brings forth broader issues related to gender and healthcare. Gender has also been identified as being significant in the valuing of different types of health related knowledge (Hagell 1989). Medical knowledge that has emerged from the positivist paradigm is considered male, whilst knowledge related to caring, relationships and experiences is considered female (Condon 1992). In all Western civilisations, the majority of doctors are male whilst nursing is a predominantly female orientated profession. Although women are increasingly entering medical education and some men into nursing, the gendered hierarchy of these two distinct professions has not been eroded by time (Lorber 1997). In this hierarchy, medicine has a greater status, holds a privileged position along with the purse-strings and as such continues to wield its power within the healthcare arena and society as a whole. According to Habernas (1971), the development of knowledge is socially constructed and its legitimacy depends upon the values and beliefs of the most powerful groups in society. Conversely, society sustains this power advantage by only accepting as valid, knowledge which extends from the most powerful groups e.g. male doctors, lawyers and

businessmen. Hence nursing practice and research predominantly exists within institutions where a handful of men control the balance of power, both in relation to knowledge development and acceptance, as well as finance. Nursing has historically accepted the superiority of male knowledge and as such based much of its earlier practices on treatment and cure (Antrobus 1997). However, nursing has begun to realise that much of what nurses practice and know to be true, cannot be measured using traditional biomedical methods alone. In the search for new ways to articulate the knowledge that is nursing, the profession is confronted by a society and healthcare arena that only hears and accepts the dominant discourse of the positivist paradigm. This leads many nurses to under-value or silence, the more humanistic yet intangible aspects of their unique role. I believe that for many, accepting the male normative frame as a basis for planning the cardiac health of women is easier than challenging the historical 'sacred canons' of the medical profession.

8.5. The' Right' Approach to Cardiac Care

The broader socio-political repercussions of the gendered findings must also be considered, as the continued systematic privileging of one sex over the other is considered an infringement of basic human rights. As Irish citizens, women should be afforded the same quality of health care as their male counterparts and 'have the right to the enjoyment of the highest attainable standard of physical and mental health.' (United Nations 1995). In making connections between women's health and the roles/lives ascribed to them by society, the United Nations Fourth World Conference in Beijing (1995) states that 'the enjoyment of this right is vital to their life and well-being and their ability to participate in all areas of public and private life' (Annex II, para. 89). In relation to the attainment of optimum cardiac care, the obstacles to its achievement in Irish women with MI include inadequate knowledge about the social and biological determinants of health and illness; the exclusion of women from cardiac research; the generalisation of results from male dominated research to women; the use of the male normative frame to educate health professionals and the public about cardiac risk, prevention and disease progression; and finally, the exclusion of women from the higher echelons of policy-making.

I consider these obstacles discriminatory, when viewed in light of Irish individuals' rights, as they each contribute to the reduced risk awareness and sub-standard treatment of one half of the population. Whilst gender bias within medicine or the delivery of care may not manifest itself as explicit discrimination, social attitudes including stereotypes, prejudices and other assumptions based upon gendered roles, may be played-out in implicit ways (American Medical Association, Council on Ethical and Judicial Affairs 1991). The exclusion of women from cardiac research means that little is truly known about the progression of myocardial infarction in Irish women. Disregarding gender in health care planning, delivery and research means that the impact of gendered lives on disease prevention, risk and progression is ignored or at best poorly understood. It then becomes easy to see how the Irish public may

disregard the risk of MI in women; how Irish women may delay in seeking care for unusual symptoms presenting in a condition that they are unlikely to experience; and how Irish health care professionals may have difficulties assessing the presence and extent of this condition in non-male patients. The United Nations Declaration on the Elimination of All Forms of Discrimination Against Women (1967) proclaimed that discrimination against women – defined broadly as denying or limiting women's equal rights with men – is unjust. This declaration forwarded an agenda in support for the abolishment of practices that sustained the notion of male superiority

8.6. Recommendations and Implications

I consider cardiac health and illness to be socially constructed, consisting of a complex interaction of gender, age, socio-economic status and other social characteristics, yet for the vast majority of medical research, these social determinants are ignored (Doyal 1995, Lorber 1997). Although I hold the androcentric biases of biomedical & epidemiological research responsible for the gendering of MI and the plight of women's cardiac health, they merely reflect the broader social system within which women reside. The Irish patriarchal society perpetuates male dominance and privilege and these values extend and infiltrate into every aspect of our lives, including health and illness. Health-care and knowledge generation also reflect these values to the extent that the major cause of death amongst Irish women, is rendered a 'male' disease and treatment devised accordingly. The findings of the study when viewed within a human rights framework, suggests that the socially constructed barriers which have militated against women's ability to receive optimum cardiac healthcare, are an infringement of their basic human rights. In a society that values men above women, where access to political and economic resources and thus the allocation of power privileges the males in society, women's health is afforded least priority.

In an effort to counteract the gendering effect of coronary artery disease and MI, the findings of this study support the United Nations' (1995) call for one cumulative effort to,

> 'Increase financial and other support from all sources for preventative, appropriate biomedical, behavioural, epidemiological and health service research on women's health issues and for research on the social, economic and political causes of women's health problems and their consequences, including the impact of gender and age equalities on chronic conditions such as cardiovascular disease.'
>
> (United Nations Fourth World Conference in Beijing 1995, Annex II, Para. 109)

To this end, one of the key recommendations of this study is the adoption and implementation of gender mainstreaming in every aspect of the cardiac health care sector. Gender mainstreaming ensures that cardiac healthcare delivery considers the implications of gender

and responds appropriately to them in the development, implementation, monitoring and evaluation of health care delivery (United Nations 1999). It incorporates gender concerns in all health policies and supports the development of institutional mechanisms that advance women's participation in the health sector, including policy-making. As an initiative to promote equality opportunities, a strategy of gender mainstreaming has been adopted by the Irish government in the National Development Plan 2000 to 2006 (Government of Ireland 1999); however, the movement to integrate a gender dimension in the area of health care has been much slower if not non-existent (Women's Health Council 2003). In their forum on women's health, the Women's Health Council (2003) recommend that the Department of Health and Children need urgently to state its commitment to the process of incorporating the ideals of gender-mainstreaming into all health policies, programmes, actions and measures and to outline its funding resource. The findings of the current study support these proposals to government. Moreover, additional recommendations are outlined here, where gender mainstreaming particularly in the delivery of cardiac health care services may serve to afford to women their rights to optimum cardiac care. Included in these discussions are recommendations related to health education and promotion, as well as implications for nursing and medical care. The Woman's Heart Model (WHM) is employed as a framework to guide health educational and health promotional recommendations.

8.6.1. Putting Gender into Health Education & Promotion

8.6.1.1. Correcting the Illness-prototype

Johnson & Lennon (1988) suggest that when individuals are in the midst of a traumatic experience, they require knowledge to identify signs and symptoms accurately, behaviours to act constructively, and knowledge and behaviours to control emotional responses. Alonzo & Reynolds (1997) support these principles and add that what is needed are interventions to reduce the evaluation period and increase pro-active help-seeking activities. The prevailing male illness prototype and associated low personal vulnerability to heart disease infiltrated each stage of the WHM and served to increase pre-hospital delays in women with MI. These findings suggest that a gender-sensitive approach to health education may assist in reducing these pre-hospital delays.

The prevailing prototype appears to be the white middle-aged Irish male victim clutching his chest and dramatically falling to the ground; however, there are many problems with this prevailing image. Firstly, the risk of a heart attack is not confined to men only, or to middle-aged or white persons. Educational campaigns need to correct this public perception by portraying the condition in its many presentations. Messages should focus on the true candidature for this condition, portraying female and male victims, whilst including different age-categories, ethnic backgrounds and socio-economic groups. Due to their perceived low vulnerability or personal risk for MI, women need to be specifically targeted and made aware

that the risks that contribute to MI and the complications following an MI endanger their lives also. They should be informed that in their life time, they are ten times more likely to develop coronary artery disease than breast cancer and mostly likely to die of heart attack or stroke.

To correct this delay-promoting misperception further, I believe that a mass public campaign emphasising the risks of heart disease in women and others, should be launched. This may include television and radio coverage, as well as direct mailing campaigns. However, it is also acknowledged that changes in behaviour which may be brought about by media and community intervention campaigns, are generally short-lived. Many such initiatives, as in the Goteborg Study (Blohm et al 1991) to reduce MI decision time, report an initial increase in early A&E attendance during the campaign launch, followed by a rapid decline when it finished. Similarly, O'Rourke et al (1989) describe a diminishing return in positive action initiatives, over a 5-year experimental education programme. A similar experience was reported in King County, Washington (Eppler et al 1994). Despite the eventual decline in positive action, the initial surge of appropriate help-seeking behaviour demonstrates that people can be influenced by what they read and hear. From these and similar campaigns, individuals have not only been influenced by a campaign to go to hospital (Blohm et al 1991), but have reported significant increases in cardiac information levels (Moses et al 1991, Eppler et al 1994). It would appear therefore that media campaigns that aim to change behaviour, are potentially very successful, but need to be repeated on a regular basis.

Earlier this year, a novel and apparently successful 'woman's heart day' was launched in the U.S. by the National Heart, Lung and Blood Institute (2004). This 'red dress' day which was part of the Institute's 'Heart Truth' campaign, was a national initiative instigated by the health department and launched by first lady, Laura Bush on February 21st 2004. Such a high profile campaign represented by a 'sexy-red dress' pin captured the attention of the public and appears to have been extremely successful in raising public awareness of the dangers of heart disease in women. Although the Department of Health and Children Ireland Irish Heart Foundation and Women's Health Council have begun to recognise and report on the dangers of heart disease in women, similar high profile media and national educational campaigns are still urgently needed.

The particular needs of women living in poverty or less well-off socio-economic groups must also be addressed. The link between disadvantage and poor health is indisputable and given that women have an increased risk of disadvantage and a potential for biased cardiac care, they are most likely to suffer from cardiac ill-health. The results of this study therefore fully endorse the prioritising of health promotional initiatives with disadvantaged individuals and establishing links with implementation structures for the National Anti-Poverty Strategy (Department of Social and Family Affairs 2002).

8.6.1.2. Presenting the Facts

Gender-sensitivity demands that all health messages related to MI are portrayed to the public in such a way that women and men have sufficient knowledge to assist in early help-seeking decision-making practices. To this end, the public should be informed of the difficulties associated with symptom interpretation and the likelihood of dismissing vague symptoms to a benign cause. Women and men also need to be made aware that pain is not always present in this condition and that the onset of MI may be slower and less dramatic than expected. The prodromal and intense symptom experiences of the 12 participants in the present study, suggest the possibility of another MI prototype, which includes a female (and possibly a male) victim enduring the slow evolving symptoms of a progressively worsening condition. Educational messages should acknowledge that gripping chest pain does not always accompany the onset of this condition, but frequently resembles other common conditions such as indigestion. The words employed to describe the symptoms of a heart attack in educational initiatives, need to take on board the descriptors that women may use. When women in the study experienced chest discomfort, the descriptors they employed seldom included the word pain. Finally, women and men need to be informed that a heart attack is not the same as a cardiac arrest, nor does it always result in collapse or death. Clearly, the prevailing belief that a heart attack is always a dramatic event needs to be dispelled and the social and medical messages pertaining to the symptoms of this event, revisited.

8.6.1.3. Providing an Action Plan

Women as well as men must understand the actions that they should take if MI symptoms (typical or atypical) occur. Such actions may include taking prescribed nitroglycerine (GTN) taking an Aspirin and calling early for an ambulance. However, these medical messages which target 'typical male' onset of cardiac ischaemia, may have also contributed to care-seeking delays. The '15 minutes of central chest-pain' which is frequently considered the hall-mark of a 'typical' heart attack (Treasure 1998) and which has informed health information campaigns internationally (Braunwald et al 1994, British Heart Foundation 1996) appears to be 'male-centred' and hence flawed. According to these guidelines, patients are advised to take a GTN spray as soon as their symptoms start and a second spray if their discomfort is not relieved within 5 minutes, followed by a third spray if symptoms persist for another 5 minutes. If the condition has not resolved after 15 minutes, then patients are advised to report to hospital. Although some campaigns also include additional symptoms, many researchers believe the '15 minute' symptom rule to be too narrow to be effective, (Ruston et al 1998, Horne et al 2000) as they too acknowledge that many MI patients experience evolving symptomology. It then becomes easy to understand how difficulties with interpretation may exist, when expected MI symptoms, which have been outlined by medical experts, fail to match experienced events.

8.6.1.4. What about GP Attendance?

The study results suggest that women were more likely to visit a GP surgery than their male counterparts and this gendered-action was associated with increased pre-hospital delays. However, as the initial point of contact for many women with MI, the GP presently provides a prime opportunity for the commencement of myocardial salvaging treatments for this group. However, the study highlighted the opposite to be true and although 300 patients attended their GPs, less than 14% received an aspirin from her/him. It is inconceivable that in an era of time-dependent reperfusion treatments, opportunities to commence early treatment, via GP-administered Aspirin, are being lost. Many women also felt that their symptoms may have been dismissed by their GP or that the GP service would be unavailable or unsatisfactory in 'after-surgery' hours. In the absence of appropriate primary healthcare support, any delay inducing activities, including GP attendance, should be discouraged in favour of earlier A&E presentation. In the interests of salvaging viable myocardium, enhancing the potential of thrombolytic treatment and increasing over-all patient survival, the public should be advised to present to hospital as early as possible. However, I also acknowledge that there is scope to develop the primary care of patients with acute MI further, where the first line management of MI patients may be initiated or directed by the GP. In the interim, the educational role of the GP practice must not be overlooked. As a community based service and one that is frequently visited by women, the GP can help to dispel the erroneous image of the typical male cardiac patient by educating and/or screening patients for cardiac risk factors. Information may be provided about the actions to take in the event of an acute cardiac illness and the importance of early hospital attendance. However, GP services must first examine their own practices for evidence of gender or age biased care.

8.6.1.5. Ambulance

Patients require reassurance that calling for an ambulance is the correct thing to do and in initiating this treatment they will expedite their subsequent care. The findings of the study show that the use of an ambulance during an acute myocardial infarction reduces pre-hospital and in-hospital delays to treatment; however, the decision by women to use this service was made only after protracted deliberation. It is therefore essential that patients and their families are encouraged to telephone an ambulance immediately in the event of un-resolving symptoms. One example of attempts to increase ambulance usage in myocardial infarction was conducted in King Country Washington (Eppler et al 1994). This campaign, with its slogan 'Call Fast, Call 911' employed a combination of television and radio spots, followed by a direct mailing campaign. Post-campaign ambulance utilisation rates were higher than those recorded before campaign initiatives (Eppler et al 1994). At present, it would seem that female patients in particular, are concerned with the social repercussions of calling an ambulance 'in error'. An ambulance service that actively encourages its use during an emergency, may serve to dispel feelings of embarrassment or fears of reproach.

8.6.1.6. Future Community Health Research May Wish to;

- Examine lay perceptions about the cause, presentation and candidacy for MI.
- Audit knowledge levels about heart disease before and after any public educational campaigns.
- Develop a clear, factual yet user-friendly framework within which individuals can interpret signs and symptoms as significant.
- Audit GP waiting and response times according to the age, gender and presenting condition of each patient.
- Examine the current GP management of MI patients.
- Consider the development of an 'algorithim of pre-hospital MI management' for GPs.
- Audit ambulance response times.
- Audit ambulance usage according to gender, age, presenting symptoms and geographical location.
- Audit ambulance administration of Aspirin.

8.6.2. Putting Gender into Nursing

8.6.2.1. Legitimising Ways of Knowing

The findings of this study suggest that greatest understandings can be obtained when the world is examined from many perspectives. A feminist methodology that provided the framework for the present study, gave voice to women's experiences by situating them to the forefront of the inquiry. The use of triangulation, which integrated the positivist and interpretivist paradigmatic sources of nursing knowledge, enabled the emergence of hard factual data together with dense contextually rich insights. The initial use of quantitative inquiry gave direction to the subsequent qualitative inquiry and as such, both sources of knowledge were enhanced by the other. I rejected Cartesian dualist assertions that binary oppositions presuppose our reality in a hierarchical way, yet conceived them coexisting in a symbiotic relationship with each legitimising and endorsing the existence of the other. Although nursing has historically accepted the superiority of 'masculine-quantitative' claims to knowledge, I believe that a deconstruction of so-called hierarchical claims to knowledge and a challenge to the superiority of positivism over all others, provides nursing with the freedom to legitimise other ways of knowing.

In nurse education, research and practice, a unique nursing epistemology of empirical, clinical and personal ways of knowing must be pursued (Antrobus 1997). However, this requires a level of conceptual debate within the profession of nursing regarding its claims to a unique body of knowledge and to date this debate progresses slowly. In the interim, the nursing profession must strive to acknowledge the legitimacy of different world-views and resist temptations to blindly follow medicines assertion of a single objective reality. Nursing can then

begin to reject androcentric biases that render invisible the lived experiences of women and other oppressed groups. In relation to the care of women with myocardial infarction, nursing must challenge medicine's use of the male normative frame and exclusion of women from cardiac research. Generalising results to women that are obtained exclusively from the male world-view of myocardial infarction and from positivist claims to a singular reality, is incompatible with other ways of knowing. Nursing knowledge about women with MI must be based on research that has included female MI participants and focused on their lived experiences. Nursing curricula must advance the multi-dimensional view of health and illness and make visible the worlds of those who have been hidden by the limitations of hard, objective data. Only by critically examining our claims to a unique knowledge base, can nursing eventually find the most legitimate ways of knowing about women and MI.

8.6.2.2. Gender Mainstreaming in Triage

Triage nursing provides the first entry point to institutional practices for the majority of female MI patients and as such A&E nurses are in an optimum position to influence the pathway of care positively for this group. Although the findings of the study show that women and men receive similar rates of reperfusion therapies, women receive these treatments, as well as medical assessment and a CCU bed, later than their male counterparts. As such, women are not afforded the same therapeutic benefits as men and this inequity in care is inconsistent with the practice of nursing. To this end, it is imperative that the clinical and academic preparation of A&E nurses incorporate an analysis of gender sensitive care and a critique of traditional biomedical claims about truth. To inform and optimise their clinical triage practices for female MI patients, triage nurses firstly need to possess knowledge pertinent to women and heart disease. It is crucial that this knowledge be derived from studying women with heart disease, rather than derived from male-dominated research.

The image of a male MI prototype must be corrected in the minds of triage and other nurses if a gender sensitive care system is to prevail. Triage nurses are in a crucial position to correct this image, by accepting as truthful and valid, the lived experience of female MI patients who present to A&E. If triage nurses continually assess for the 'typical' male-orientated cues of myocardial infarction then women will continue to have delayed care within the hospital system. In a study of 78 A&E nursing and medical staff, Then et al (2001) found that 85% of nurses and 66% of medics stated that they primarily assessed for the presence of chest pain in patients presenting with MI. Moreover, although almost all staff had cared for patients with 'atypical' symptoms, only 35% of staff stated that they would assess for these symptoms. A&E staff members need to include these additional descriptors when assessing women with suspected MI, rather than merely assessing for the presence of pain. Triage nurses can advance gender-sensitive practice by actively hunting for and attributing importance to 'atypical' and prodromal symptoms. Applying gender-sensitive assessment techniques may include the use of words other than 'pain', to ascertain symptom onset and progression.

Gender-sensitive care may include the expeditious referral of female patients to the A&E medical officers and in so doing triage nurses may not only advance the concept of gender-sensitivity, but may inadvertently become the advocates for women with MI. Finally, triage nurses must critically assess their own practices and the practices of others, for the possibilities and influences of biased care. Age, gender, colour and class biases may all serve to influence the selection of patients' cues, the determination of suspected cause and the need for emergency triage (Arslanian-Engoren 2000).

8.6.2.3. Gender Sensitivity in Patient Education

Nursing staff on Coronary Care and cardiac step-down units may also advance the concept of gender-sensitive care by their acknowledgement and assessment of 'atypical' and prodromal symptomotology and by their continued advocacy on behalf of female MI patients. The nursing care of acutely ill MI patients has been greatly informed by medical technological advances and medical knowledge of this condition. Hence, the biomedical exclusion of women from cardiac research and the continuous use of the male normative frame has infiltrated into nurse education curricula and subsequently into clinical practice. As with A&E nurses, CCU staff members need to examine their decision-making processes and knowledge claims critically, in light of their links with traditional medicine and hence androcentric biases. To this end, they too need to base their clinical care of female MI patients on research that has included women as participants. However, CCU nursing staff members also have a huge educational role to play and the opportunity to dispel myths pertaining to the 'male' MI prototype by presenting patients and family with the true facts. Patients and families can receive information about likely candidates for MI, the potential presence of prodromal, atypical and typical symptoms and advice about the appropriate action to be taken in the event of such a scenario.

The findings of this study suggest that patient and family education that is provided by CCU nurses, be guided by all stages of the WHM. At the 'Seeking Understanding' and 'Seeking Meaning' stages, women and men need to be made aware of the diversity of symptoms that may be experienced during a myocardial infarction. They should be informed of the potential presence of prodromal symptoms, which frequently present as exhaustion or malaise. Although women appear to have knowledge about the more 'typical' symptoms of myocardial infarction, few had knowledge about other presenting symptoms such as breathlessness, nausea and chest discomfort. Women need to receive information about the possible 'atypical' presentations that may accompany this condition, with the same intensity as they receive 'typical' information. Due to their tendency to delay reporting to hospital, it is important that nurses encourage female patients in particular, to seek medical advice regarding their cause, rather than attempting to normalise these symptoms.

Within the 'seeking sense of self' stage, women need to be made aware of how, in their desire to control the situation and 'sort things out' for themselves, they may habitually resort to self-treatments. This confidence may seem unyielding, yet waiting until 'fear takes hold' before seeking help, may be counter-productive to their chances of surviving an MI. Nurses can explain women's attempts to trivialise the situation and their attempts to normalise symptoms by attributing their cause to co-morbid conditions. Additionally, nurses can remind female patients that their family roles and commitment to others may lead them to ignore symptoms until their responsibilities have been met. In the presence of unresolved symptoms, women should be discouraged from spending protracted amounts of time at any of these ventures, but rather encouraged to seek early medical attention.

The WHM highlights the pro-active role of family members and this insight into pre-hospital behaviour by patient and family can provide CCU nurses with education-targeted opportunities. At the 'seeking sense of safety' stage, women and men should be made aware of how they may frequently involve others before seeking medical attention. They should be encouraged to take help-seeking advice from others and discouraged from accepting suggestions that may delay their immediate hospitalisation. The study findings also suggest that nurses should discuss this important help-seeking role with family members and encourage the adoption of an action-plan that will expedite the care of any future cardiac events. In so doing nurses should discourage family members from driving their loved one into hospital, as they are unable to provide assistance if symptoms become worse. Moreover, the study findings suggest that arrival to hospital in this fashion is associated with longer pre-hospital delays to treatment. Although associated with short pre-hospital delays, nurses should discourage the driving of oneself into hospital, as an unsafe and potentially life-threatening mode of transport for both patient and the public.

8.6.2.4. Future Nursing Gender-sensitive Initiatives/ Research may Wish to;

- Critically examine nursing curricula for gender sensitivity at undergraduate and postgraduate academic levels.
- Critically examine the decision making skills of A&E/CCU nurses for patients with symptoms suggestive of MI
- Audit A&E waiting, triage, medical referral and treatment times for all patients with symptoms suggestive of MI.
- Audit transfer times between A&E and CCU and examine the reasons for identified delays.
- Audit assessment and treatment times for women and men in CCU.
- Critically examine triage and CCU documentation for evidence of gender-sensitivity.
- Critically examine CCU information literature for gender-sensitivity.
- Explore the pre-hospital behaviour of women and men with MI.
- Explore the pre-hospital behaviour of elderly patients with MI.

- Explore the role of 'significant others' in the pre-hospital help-seeking behaviour of patients with MI.
- Examine the differences/similarities in reported symptoms between women and men with MI.
- Explore recovery experiences of women and men post MI.

8.6.3. Putting Gender into Medicine

Medicine's preoccupation with disease and cure, together with its reliance on positivist approaches to knowledge acquisition, has limited its potential truly to understand the social and biological determinants of health and illness. This narrow view has been further distorted by rejecting as inferior all other ways of knowing and by the continuous use of man as its measure of all things. However, as the determinants of women's cardiac health have been recognised as stemming both from sex and gender differences, medicine needs to re-evaluate its superior knowledge claims. This interaction of biological and genetic factors, together with the influences of socially constructed lives demands that medicine alters its underlying research philosophy. To correct its present discriminatory cardiac research and clinical practices, medicine needs to explore the experience of heart disease in women and base the cardiac care of women according to its findings. However, medicine must also acknowledge the multifaceted aspects of women's cardiac health experiences and accept as valid women's accounts of these personal experiences. At a fundamental level, biomedical research needs to reconstruct how it views the world, if the differences in patterns of cardiac health and illness between the sexes are to be appreciated. This involves the inclusion of women in all cardiac research and the disaggregation of statistics by sex and gender to provide a more complete picture of women's cardiac health status. The exclusion of women is paramount to discriminatory research practices, whilst in practice their omission can lead to problems of validity and inappropriate health care.

Only recently a Cochrane Library analysis of thirty systematic reviews on the area of cardiovascular health, confirmed that women were still largely excluded or ignored in clinical trials (Johnson et al 2003). Of the 258 trials that were reviewed, women accounted for only 27% of the total pooled population. Less than two hundred trials included women and men as subjects, but of these only 33% examined outcomes according to gender. Where gender-based analysis was performed, 20% confirmed significant gender-specific differences. Hence, even at the dawn of the new millennium, elements of ancient androcentric theories infiltrate 'modern medicine.' It is also disappointing to see that medicine still clings to the male anatomy and experience of illness as the normative frame. It is timely that medicine releases its grip on this ancient 'comfort blanket' and acknowledges that the normative frame has been rendered redundant by all but the medical establishment.

However, in order for medicine to respond appropriately to these demands for gender-sensitivity, it is firstly imperative that doctors learn about gender and other social determinants of health in their initial medical training. A recent survey of UK medical school curricula revealed that gender as a determinant of non-reproductive health was largely ignored (Doyal 2003). Although some schools included a couple of lectures on the subject, 'women's health' remained situated squarely in the realms of obstetrics and gynaecology. Unfortunately, no comparative research is currently available in Ireland; however, the gaps in the professional education of our closest neighbours may be indicative of similar trends in Irish medical schools.

8.6.3.1. Future Medical Gender-Sensitive Initiatives/Research may Wish to:

- Develop a research agenda that is gender-sensitive and inclusive.
- Conduct inter-disciplinary and/or collaborative work involving some 'mix-method' approaches to inquiry.
- Include women in all clinical trials for medications/interventions that will potentially be used in their cardiac care.
- Conduct research with the meaningful participation of women at every stage of the process.
- Promote women researchers and allocate resources for gender-sensitive research.
- Examine differences in symptom onset and presentation between women and men with coronary artery disease.
- Ensure that in the analyses of results from clinical trials, sex and gender disaggregated data are needed.
- Critically examine medical curricula for gender sensitivity.
- Critically examine medical practice for evidence of gender-biased care.
- Actively pursue strategies to incorporate gender issues into undergraduate and post-graduate education.

8.6.4. Influencing Policies and Programmes - Closing Comments

As previously illustrated (section 8.5), women's poor cardiac health is considered a reflection of the gender inequalities prevailing within Irish society. As such, women's overall health status must surely improve if their economic, political and social status increases to that afforded to males in society. Gender equality is therefore the ultimate goal, where Irish women and men have equal opportunities to realise their full human rights, contributing as partners to national, political, economic, social and cultural developments and to reap the benefits of their successes. A preliminary step to achieve this enormous goal is the introduction of gender mainstreaming as an integral component of policy, program and legislative development and implementation. The use of gender mainstreaming in health policy development ensures that existing or future policies would be evaluated according to their impact on women and men. As such, gender mainstreaming may contribute to greater

understandings about social processes of health and illness, enabling policy makers to respond with informed and equitable options.

In relation to the exclusion of women from cardiac research, some states have responded in a gender-sensitive way. In 1993, the U.S. government passed a law requiring all research applications for federal funding to show that women and men were equally or at least appropriately represented in all research designs (Mastroianni et al 1994). Similar initiatives were implemented in Canada, Australia and South Africa; however, these arguments have received little or no attention here in Ireland. Although the Department of Health and Children Ireland (1999) broadly recommend the inclusion of all appropriate groups into medical research, it fails to offer any practical guidelines on achieving this goal. The issue of mainstreaming gender in health and other public policies must therefore be considered an urgent goal of the present government.

Finally, when viewed within a human rights framework, the study findings suggest that the socially constructed barriers that have militated against Irish women's ability to receive optimum cardiac healthcare, are an infringement of their basic human rights. In a society that values men above women, where access to political and economic resources and thus the allocation of power privileges the males in society, women's health is afforded least priority. For Irish women, the need for gender mainstreaming is especially pressing and timely, off-setting how for millennia, we have been 'overlooked, ignored or subsumed' (Rosser 1994:1).

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Appendices

Appendix I

Census Form Development

Dublin Hospitals Myocardial Infarction Census 2001-2002

Patient Details

1. Hospital Number:

2. Date of birth:

3. Sex: Female Male

4. Insurance Status: Private Public

5. Referral Source: Self GP
Other.....

6. Admission Route:
Car Passenger Car Self Ambulance Public Transport Other.....

Admission Details

	Time	Date
7. Symptom Onset:	24hr clock :	Day Month Year
8. Admission to hospital:	24hr clock :	Day Month Year
9. Triaged by A&E Nurse:	24hr clock :	Day Month Year
10. Medical Staff Contacted:	24hr clock :	Day Month Year
11. Admitted To Ward:	24hr clock :	Day Month Year

12. Admitting Ward: CCU ICU Medical Ward Other .....

Treatment Details

13. MI Diagnosis Confirmed?: No Yes

If yes, state how:
ECG
Clinical Presentation
Cardiac Enzymes

14. Thrombolysis Given?:
No Yes

If yes,

15. Thrombolysis Commenced:
24hr clock Day Month Year
:

16. Thrombolysis given in:
CCU ICU A&E Other

17. Reason for not administering thrombolysis

Unknown
Too Late
ECG ambiguous
In-hospital death
Contra-indications Please specify,
.....
.....
.....

18. Primary PTCA Performed:
No Yes

If yes,

19. Primary PTCA Commenced
24hr clock Day Month Year
:

Patient Outcome

20. Complicated MI No Yes

If yes, please specify;
.....
.....
.....
.....

21. In –hospital death No Yes

Please forward all completed forms to:
Ms. Sharon O' Donnell, College of Nursing, Tallaght Hospital, Dublin 24
Phone: 414 2891

Dublin Hospitals Myocardial Infarction Census 2001-2002

Patient Details

1. Hospital Number:

2. Date of birth:

3. Sex: Female Male

4. Marital Status: Single ☐ Married ☐

Separated ☐ Divorced ☐ Widowed ☐

5. Referral Source: Self GP

Other.....

6. Admission Route:

Car Passenger Car Self Ambulance Public Transport Other.....

Admission Details

	Time	Date
7. Symptom Onset:	24hr clock :	Day Month Year
8. Arrival to hospital:	24hr clock :	Day Month Year
9. Triaged by A&E Nurse:	24hr clock :	Day Month Year
10. Seen by Medical Staff	24hr clock :	Day Month Year
11. Admitted To CCU:	24hr clock :	Day Month Year

Treatment Details

13. MI Diagnosis Confirmed?: No Yes

If yes, state how:

ECG

Clinical Presentation

Cardiac Enzymes

14. Thrombolysis Given?:

No Yes

If yes,

15. Thrombolysis Commenced:

24hr clock Day Month Year

:

16. Thrombolysis given in:

CCU ICU A&E Other

17. Reason for not administering thrombolysis

Unknown

Too Late

ECG ambiguous

In-hospital death

Contra-indications Please specify,

.....

.....

.....

18. Primary PTCA Performed:

No Yes

If yes,

19. Primary PTCA Commenced

24hr clock Day Month Year

:

Patient Outcome

21. In –hospital death No Yes

Please forward all completed forms to:
Ms. Sharon O' Donnell, College of Nursing, Tallaght Hospital, Dublin 24
Phone: 414 2891

Dublin Hospitals Myocardial Infarction Census 2001-2002

Patient Details

1. Hospital Number:

2. Age: **3. Sex:** Female 1 Male 2

4.Occupation:.....(please specify)

5. Insurance Status:

Private 1 Public 2 Medical Card 3

6. Referral Source: Self 1 GP 2

Other 3 .....(please specify)

7. Admission Route:

Car Passenger 1

Car Self 2

Ambulance 3

Public Transport 4

Other 5 .....(please specify).

Admission Details

	Time	Date
8. Symptom Onset:	24hr clock :	Day Month Year
9. Time when symptoms became most intense, if different from above:	24hr clock :	Day Month Year
10. Arrival to hospital:	24hr clock :	Day Month Year
11. Triaged by A&E Nurse:	24hr clock :	Day Month Year
12. Assessed by Medical Staff :	24hr clock :	Day Month Year
13. Admitted To CCU:	24hr clock :	Day Month Year

Treatment Details

14. Working diagnosis of MI?: No 1 Yes 2

15. Thrombolysis Given?:

No 1 Yes 2

If yes,

16. Thrombolysis Commenced:

24hr clock : Day Month Year

17. Thrombolysis given in:

CCU 1

ICU 2

A&E 3

Other 4.....(please specify)

18. Reason for not administering/delaying thrombolysis

Unknown 1

Too Late 2

ECG ambiguous 3

In-hospital death 4

Contra-indications 5, (please specify)

.....

.....

.....

.....

...

19. Primary PTCA Performed:

No 1 Yes 2

If yes,

20. Primary PTCA Commenced

24hr clock : Day Month Year

21. MI Diagnosis Confirmed?: No 1 Yes 2

Please forward all completed forms to:
Ms. Sharon O' Donnell, College of Nursing, Tallaght Hospital, Dublin 24
Phone: 414 2891

Dublin Hospitals Myocardial Infarction Census 2001-2002

Patient Details

1. Hospital Number:

2. Age: **3. Sex:** Female 1 Male 2

4. Postal Code:.....(please specify)

5. Insurance Status:

Private 1 Public 2 Medical Card 3

6. Referral Source: Self 1 GP 2

Other 3 .....(please specify)

7. Admission Route:

Car Passenger 1 Car Self 2

Ambulance 3 Public Transport 4

Other 5 .....(please specify).

Admission Details

	Time	**Date**
8. Symptom Onset:	24hr clock :	Day Month Year

9. Time when symptoms became most intense, if different from above:

24hr clock : Day Month Year

10. Arrival to hospital: 24hr clock : Day Month Year

11. Triaged by A&E Nurse: 24hr clock : Day Month Year

12. Assessed by Medical Staff : 24hr clock : Day Month Year

13. Admitted To CCU: 24hr clock : Day Month Year

14. Working diagnosis of MI?: No 1 Yes 2

Treatment Details

15. Aspirin Given?: No 1 Yes 2 **If yes,**

16. Aspirin given in:

Ambulance 1 CCU 2 A&E 3

Other 4.....(please specify)

17. Approximate time Aspirin Given:

24hr clock : Day Month Year

18. Reason for not administering Aspirin:

Unknown 1 Known Allergy 2

Patient unconscious 3

Contra-indications 4 (please specify)

.....

19. Thrombolysis Given?:

No 1 Yes 2 **If yes,**

20. Thrombolysis Commenced:

24hr clock : Day Month Year

21. Thrombolysis given in:

CCU 1 A&E 2

Other 3.....(please specify)

22. Reason for not administering/delaying thrombolysis

Unknown 1 Too Late 2

ECG ambiguous 3

In-hospital death 4

Contra-indications 5 (please specify)

.....

23. Primary PTCA Performed:

No 1 Yes 2 **If yes,**

24. Primary PTCA Commenced

24hr clock : Day Month Year

25. MI Diagnosis Confirmed?: No 1 Yes 2

Please forward all completed forms to:
Ms. Sharon O' Donnell, College of Nursing, Tallaght Hospital, Dublin 24
Phone: 414 2891

Appendix II

Pilot Census Form

Dublin Hospitals Myocardial Infarction Census 2001-2002

Patient Details

1. Hospital Number:

2. Age: **3. Sex:** Female 1 Male 2

4.Occupation:.....(please specify)

5. Insurance Status:

Private 1 Public 2 Medical Card 3

6. Referral Source: Self 1 GP 2

Other 3 .....(please specify)

7. Admission Route:

Car Passenger 1

Car Self 2

Ambulance 3

Public Transport 4

Other 5 .....(please specify).

Admission Details

	Time	Date
8. Symptom Onset:	24hr clock :	Day Month Year
9. Time when symptoms became most intense, if different from above:	24hr clock :	Day Month Year
10. Arrival to hospital:	24hr clock :	Day Month Year
11. Triaged by A&E Nurse:	24hr clock :	Day Month Year
12. Assessed by Medical Staff :	24hr clock :	Day Month Year
13. Admitted To CCU:	24hr clock :	Day Month Year

Treatment Details

14. Working diagnosis of MI?: No 1 Yes 2

15. Thrombolysis Given?:

No 1 Yes 2

If yes,

16. Thrombolysis Commenced:

24hr clock : Day Month Year

17. Thrombolysis given in:

CCU 1

ICU 2

A&E 3

Other 4.....(please specify)

18. Reason for not administering/delaying thrombolysis

Unknown 1

Too Late 2

ECG ambiguous 3

In-hospital death 4

Contra-indications 5, (please specify)

.....

.....

.....

.....

...

19. Primary PTCA Performed:

No 1 Yes 2

If yes,

20. Primary PTCA Commenced

24hr clock : Day Month Year

21. MI Diagnosis Confirmed?: No 1 Yes 2

Please forward all completed forms to:
Ms. Sharon O' Donnell, College of Nursing, Tallaght Hospital, Dublin 24
Phone: 414 2891

Appendix III

Dublin MATHS 2001/2 Census Form

Dublin Hospitals Myocardial Infarction Census 2001-2002

(Mater)[6]

Patient Details

1. Hospital Number: ☐☐☐☐☐☐☐☐☐☐

2. Age: ☐☐ **3. Sex:** Female ☐1 Male ☐2

4. Postal Code:.....(please specify)

5. Insurance Status:

Private☐1 Public ☐2 Medical Card☐3

6. Referral Source: Self ☐1 GP ☐2

Other ☐3 ....(please specify)

7. Admission Route:

Car Passenger ☐1Car Self ☐2

Ambulance ☐3Public Transport ☐4

Other☐5 .....(please specify).

Admission Details

	Time	Date
8. Symptom Onset:	24hr clock ☐☐:☐☐	Day Month Year ☐☐ ☐☐ ☐☐

9. Time when symptoms became most intense, if different from above:

24hr clock ☐☐:☐☐ Day Month Year ☐☐ ☐☐ ☐☐

10. Arrival to hospital: 24hr clock ☐☐:☐☐ Day Month Year ☐☐ ☐☐ ☐☐

11. Triaged by A&E Nurse: 24hr clock ☐☐:☐☐ Day Month Year ☐☐ ☐☐ ☐☐

12. Assessed by Medical Staff : 24hr clock ☐☐:☐☐ Day Month Year ☐☐ ☐☐ ☐☐

13. Admitted To CCU: 24hr clock ☐☐:☐☐ Day Month Year ☐☐ ☐☐ ☐☐

14. Working diagnosis of MI?: No ☐1 Yes☐2

Treatment Details

15. Aspirin Given?: No ☐1 Yes☐2 **If yes,**

16. Aspirin given in:

Ambulance ☐1 CCU ☐2 A&E ☐3

Other ☐4.....(please specify)

17. Approximate time Aspirin Given:

24hr clock ☐☐:☐☐ Day Month Year ☐☐ ☐☐ ☐☐

18. Reason for not administering Aspirin:

Unknown ☐1 Known Allergy☐2

Patient unconscious ☐3

Contra-indications ☐4 (please specify)

.....

19. Thrombolysis Given?:

No ☐1 Yes ☐2 **If yes,**

20. Thrombolysis Commenced:

24hr clock ☐☐:☐☐ Day Month Year ☐☐ ☐☐ ☐☐

21. Thrombolysis given in:

CCU ☐1 A&E ☐2

Other ☐3.....(please specify)

22. Reason for not administering/delaying thrombolysis

Unknown ☐1Too Late ☐2

ECG ambiguous ☐3

In-hospital death ☐4

Contra-indications ☐5 (please specify)

.....

23. Primary PTCA Performed:

No☐1 Yes ☐2 **If yes,**

24. Primary PTCA Commenced

24hr clock ☐☐:☐☐ Day Month Year ☐☐ ☐☐ ☐☐

25. MI Diagnosis Confirmed?: No ☐1 Yes☐2

Thank you for your help

Please forward all completed forms to:
Ms. Sharon O' Donnell, College of Nursing, Tallaght Hospital, Dublin 24
Phone: 087 629 0563

Appendix IV

Permission for Strand 1

Education Centre
Phone: 414 2891
27.02.01

*Dr.******
Consultant Cardiologist
St. Vincent's Hospital
Elm Park
Dublin 4

*Dear Dr.******

Thank you for seeing me on Thursday 22.02.01, to discuss the pending research on myocardial infarction time delays to treatment. I have subsequently contacted both the Director of Nursing and the Ethics committee at St. Vincent's Hospital to inform them of your support for this study.

I am currently in the process of seeking support and ethical approval from the remaining participating hospitals, following which the Dublin Hospitals Myocardial Infarction Census and subsequent qualitative inquiry will commence. I shall also be visiting with the nursing staff of each unit, to gain their support for the completion of this census. I will keep you informed of the progress of this study, and the estimated date of commencement.

Yours sincerely,

.....
Sharon O' Donnell
Tutor

Dr. Cecily Begley,
Director,
School of Nursing and Midwifery Studies,
C/O Trinity Centre for Health Sciences,
St. James's Hospital,
James's Street,
Dublin 8.

Ms. Sarah Condell,
Lecturer in Nursing,
Trinity College,
Dublin 2.

Ms Sharon O'Donnell,
Nurse Tutor,
AMNCH,
Tallaght,
Dublin 24.

22nd February 2001

RE: Myocardial Infarction Care Pathways – are delays gender specific.

Dear Sharon,

The Joint Research Ethics Committee at its meeting on the 13th February 2001 agreed to give Ethical Approval to the above study subject to the following conditions:

1) Question 43 should be signed by the Project Supervisor.
2) A Consent Form is required for this study.
3) Will the Consultants and relevant Hospitals be aware of the study?
4) Is there a time scale for this Study.

Members of the Committee raised the question of the feasibility of this study. If you could reassure the Committee on this point it would be appreciated.

The following material was reviewed in connection with this study:

1) Committee's Protocol Form dated 30th January 2001.
2) Patient Information Sheet and Consent Form.
3) Dublin Hospitals Myocardial Infarction Census 2001-2002.
4) Details of proposed programme of research.
5) A review of literature by Ms. Sharon O'Donnell.

Yours sincerely,
Dan.

Daniel R. Lynch,
Senior Executive Officer.

College of Nursing
Phone: 414 2891

27.02.01

*Ms*****
Director of Nursing
St. James's Hospital
Dublin 8

*Dear Ms. *****,*

I am presently undertaking my Masters in Science by Research in Trinity College Dublin, and I wish to seek your permission to undertake a portion of my research at St. James's Hospital. The proposed research study for this award is entitled "Myocardial Infarction Care Pathways – are delays gender specific?" I have enclosed a copy of my proposal for your attention. The aim of this study is to identify any gender specific care-pathway delays amongst women and men with myocardial infarction and in so doing, to assist in detailing the baseline information as required in recommendation 7.4. Recommendation R7.4 states,

> *"... The time to treatment of patients with acute sustained chest pain and the reasons for delays in accessing care must be identified This baseline information should be used to establish targets for response times and for times to reach coronary care."*
>
> *(Building Healthier Hearts 1999 pp. 86)*

The research involves an across method triangulation approach which incorporates firstly a quantitative strand, followed then by a qualitative strand The quantitative strand involves the completion of a one year cardiac census of all Dublin Coronary Care Units, with the aim of establishing time delays to treatment for both men and women. I have enclosed a copy of the cardiac census form for your perusal. It is hoped that the identification of any delays in treatment may then be investigated in a qualitative manner, with the ultimate aim of improving the quality of care to cardiac patients.

*The combined ethics committees of St. James's Hospital and the Adelaide & Meath Hospital have given ethical clearance for this study, pending the approval of both Directors of Nursing from each hospital. I would therefore greatly appreciate your permission to include St. James's Hospital in the Dublin Myocardial Infarction Census and the subsequent qualitative inquiry. Professor *** is fully supportive of this involvement and has agreed to act as my research supervisor for the period of study. If you wish to have clarification on any of the research proposal, please do not hesitate to contact me.*

Thank you for your attention,

Yours sincerely,

.....
Sharon O' Donnell
Nurse Tutor

College of Nursing
Phone: 414 2891

27.02.01

Dear Unit Manager

I am presently undertaking my Masters in Science by Research in Trinity College Dublin, and I wish to seek your permission to undertake a portion of my research at St. James's Hospital. The proposed research study for this award is entitled 'Myocardial Infarction Care Pathways – are delays gender specific?' I have enclosed a copy of my proposal for your attention.

The purpose of the proposed research is to carry out recommendation R7.4 of the Cardiovascular Health Strategy Group, by examining the care pathway delays for patients with myocardial infarction. Recommendation R7.4 states,

> *"... The time to treatment of patients with acute sustained chest pain and the reasons for delays in accessing care must be identified This baseline information should be used to establish targets for response times and for times to reach coronary care."*
>
> *(Building Healthier Hearts 1999 pp. 86)*

The research involves an across method triangulation approach which incorporates firstly a quantitative strand, followed then by a qualitative strand The quantitative strand involves the completion of a one year cardiac census (by CCU nurses) of all Dublin Coronary Care Units, with the aim of establishing time delays to treatment for both men and women. I have enclosed a copy of the cardiac census form for your perusal. It is hoped that the identification of any delays in treatment may then be investigated in a qualitative manner, with the ultimate aim of improving the quality of care to cardiac patients.

*The hospital Ethics Committee and Director of Nursing has given ethical clearance for this study. Professor ***** is fully supportive of this involvement and has agreed to act as my research supervisor for the period of study. However, as primary caregivers to MI patients and potential data collectors for a full year, it is obvious that the Census would have the greatest impact on CCU nurses' roles. I would appreciate it if you would discuss the study and its potential impact with your staff and consider the feasibility of the study for your unit. If you wish to have clarification on any of the research proposal or would like me to come and speak with your staff, please do not hesitate to contact me.*

Thank you for your attention,

Yours sincerely,

.....

Sharon O' Donnell
Nurse Tutor

Appendix V

Patient Information and Consent Forms

Patient Information

Aims: Heart attack is currently the main cause of early death in Ireland. Quick treatment for this condition depends on the person being able to seek help early. Treatment with heart drugs can prevent death and slow the rate of serious events. Of concern to the care of patients having a heart attack, are delays which occur before hospital, as well as delays to treatment, which may occur in the hospital. The aim of this study is to record these delays and improve the care of heart attack patients.

Census: To record these delays, a census of all heart attack patients admitted to Dublin hospitals will be kept. This census will be started by nursing staff during your stay in CCU. The census will have details about the timing of your illness, admission and care. Some details about your age and gender will also be taken.

Benefit: Early treatment for patients having a heart attack ensures the best care for patients. It is important to record the delays to care, so that treatment can improve.

Risk: The census is just a record of data, which will not effect any of your care while in hospital.

Your Rights: Your hospital number will be your census record, but your name will not appear. Your details will be confidential. Participation in this study is voluntary, and you may withdraw your details from the Census at any time. The wish to withdraw from this study will in no way effect your rights.

Permission: This study has been approved by the hospital Research Ethics Committee.

The Researcher: More details about the study may be obtained from Sharon O' Donnell, who can be reached at 01-462 2060.

Patient Consent Form

Myocardial Infarction Care Pathways – are delays gender specific?

This study and this consent form have been explained to me. My research nurse has answered all my questions to my satisfaction. I believe I understand what will happen if I agree to be part of this study. I have read, or had read to me, this consent form. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction. I freely and voluntarily agree to be part of this research study, though without prejudice to my legal and ethical rights. I have received a copy of this agreement

PATIENT'S NAME:.....

PATIENT'S SIGNATURE:: .....Date:.....

Where the patient is unable to understand the nature of the study and scope of the consent required, the form must be signed by a person willing to give consent to his or her participation in the research study (other than the researcher)

NAME OF CONSENTOR, PARENT or GUARDIAN:.....

SIGNATURE:.....Date:.....

RELATION TO PATIENT:.....

Where the participant is capable of understanding the nature of the study, but is physically unable to sign written consent, two people who were present when consent was given by the participant to the researcher, may sign the consent form.

NAME OF FIRST WITNESS:.....

SIGNATURE:.....Date:.....

NAME OF SECOND WITNESS:.....

SIGNATURE:.....Date:.....

Statement of investigator's responsibility: I have explained the nature, purpose, procedures, benefits, to this research study. I have offered to answer any questions and fully answered such questions. I believe that the participant understands my explanation and has freely given informed consent.

Researchers signature:.....Date:.....

Appendix VI

Dissemination of Findings to Hospital

9 Newhall Court
Blessington Rd.,
Dublin 24
06.05.02

Professor
Consultant Cardiologist
Hospital (6)

*Dear Prof ***,*

Thank you for acting as clinical sponsor for the study "Women and myocardial infarction: An analysis of care pathways delay". As you may be aware, I have now completed the first strand of the study, which consisted of a year-long MI Census, involving all six Dublin Major Academic Teaching Hospitals. I am currently in the process of analysing the aggregate findings of this Census, however as promised, I have enclosed a preliminary report of the findings pertaining to Hospital 6. I have also forwarded copies to the Ethics committee and coronary care staff. If you would like a formal presentation (power-point) of these findings to your staff members (joint medical & nursing presentation), please don't hesitate to ask. I shall be working abroad until June 7th 2003, however I would happy to oblige following this time.

Yours sincerely,

.....

Sharon O' Donnell
Clinical Research Fellow (HRB) & Doctoral Student (TCD)

odonnellsharon@eircom.net *Phone:087 629 0563*

Introduction

It is widely accepted that revascularisation with either thrombolysis or primary PTCA will save the lives of many patients experiencing myocardial infarction. However, only early intervention with these therapies is likely to result in optimum benefit to the patient and this greatly determines morbidity and mortality following the acute event (Braunwald 1993).

The care pathway from onset of symptoms to initiation of these therapies is therefore an extremely important determinant of outcome, to the extent that guidelines for 'call-to-needle' and 'door-to-needle' times have been recommended (European Society for Cardiology 1996, Irish Cardiovascular Health Strategy Group 1999, UK National Service Framework 2000). Recommendation R7.4 of the Irish Cardiovascular Health Strategy Group states,

> *'... The time to treatment of patients with acute sustained chest pain and the reasons for delays in accessing care must be identified This baseline information should be used to establish targets for response times and for times to reach coronary care.'*
>
> (Building Healthier Hearts 1999:86)

Hence, the aim of this study was to identify any gender specific care-pathway delays amongst women and men with myocardial infarction and in so doing, to assist in detailing the baseline information as required in recommendation 7.4. The study is comprised of a 12-month 'Dublin Major Academic Teaching Hospitals Myocardial Infarction Census 2001/2002' from which this report is taken, followed by a qualitative examination of any identified care pathway delays. As findings from numerous other comparative studies in the United States and mainland Europe suggest that women are most likely to experience care pathway delays, gender specific delays were explored in detail.

O'Donnell, S. (May 2003) Report to Hospital (6) CCU Staff

Study Methods

Site: The Dublin Major Academic Teaching Hospitals (MATHS) MI Census 2001/2002 was carried out in the Coronary Care Units (CCUs) of the six Major Academic Teaching Hospitals in Dublin. These include the Adelaide and Meath Hospital, Beaumont Hospital, The Mater Hospital, James Connolly Memorial Hospital, St. James's Hospital, and St. Vincent's Hospital. In ensure anonymity each hospital was arbitrarily assigned a code from 1-6. This preliminary report shall outline the Census results pertaining to hospital (6) only (Only hospital staff were aware of their hospital code).

Time Span: The Dublin MATHS 2001/2 MI Census commenced on December 1st 2001 and extended until November 30th 2002.

Negotiation of Access: Permission to carry out the study was sought from the Ethics Committee, Director of Nursing, Coronary Care Unit Sister and a sponsor Consultant Cardiologist of each participating hospital.

Inclusion Criteria: All patients who were admitted to the Dublin MATHS CCUs (via the hospitals' A&E departments) with a working diagnosis of myocardial infarction (MI) were included in the study. The population included only those patients who were identified to the researcher by the CCU nursing staff as meeting the inclusion criteria and those patients who consented to their inclusion in the Myocardial Infarction Census.

Exclusion Criteria: All patients who were admitted to CCU without a working diagnosis of MI were excluded from the Dublin MATHS 2001/2 MI Census. Furthermore, all MI patients admitted to CCU who did not arrive via A&E department were also excluded from the study. Subsequently, all intra-hospital and inter-hospital transfers, or those MI patients who died in A&E prior to transfer to CCU were excluded. Also excluded were patients who were misdiagnosed, as were those who were diagnosed as MI yet transferred to medical wards.

Population: Based on the above inclusion and exclusion criteria, a total of 890 patients were included in the Dublin MATHS 2001/2 MI Census

Data Collection Tool: The data collection tool consisted of a 25-item Dublin Hospitals Myocardial Infarction Census (Appendix I).

Data Collectors: The CCU nursing staff collaborated by agreeing to act as data collectors for the period of the study. The staff identified patients with a diagnosis of MI and completed a census form for each patient admitted to the coronary care unit who met the inclusion criteria. The information recorded on the census form was derived from medical and nursing notes during the admission of the patient to the unit, some of which, had been documented by A&E medical and nursing staff. CCU staff members retrospectively transcribed this data to the Census forms.

The completed census forms were stored in a designated box file on the unit, from where the researcher collected the forms twice weekly. The researcher checked for both completion and accuracy of the census forms. This was performed by scanning medical and nursing notes and by confirming appropriate information with the patient during the consent procedure.

Patient Consent: Retrospective consenting was carried out for each patient usually on day 2-4 following admission to CCU. As soon as the patient was deemed by the unit sister/charge nurse, to be physiologically stable, the researcher explained the study to the patient and gained permission from her/him to utilise the completed census form.

Results: This preliminary report pertains to the hospital (6) sub-population only and provides an outline of results yielded from the year-long Census within this hospital. Due to the small number of patients involved in this sub-population, only limited statistical examination is possible.

Census Findings for The hospital (6) Sub-Population

For the most part, items 2-7 of the 'Dublin MATHS 2001/2002 MI Census', were concerned with categorical data related to biographical details and pre-hospital events - these are outlined below.

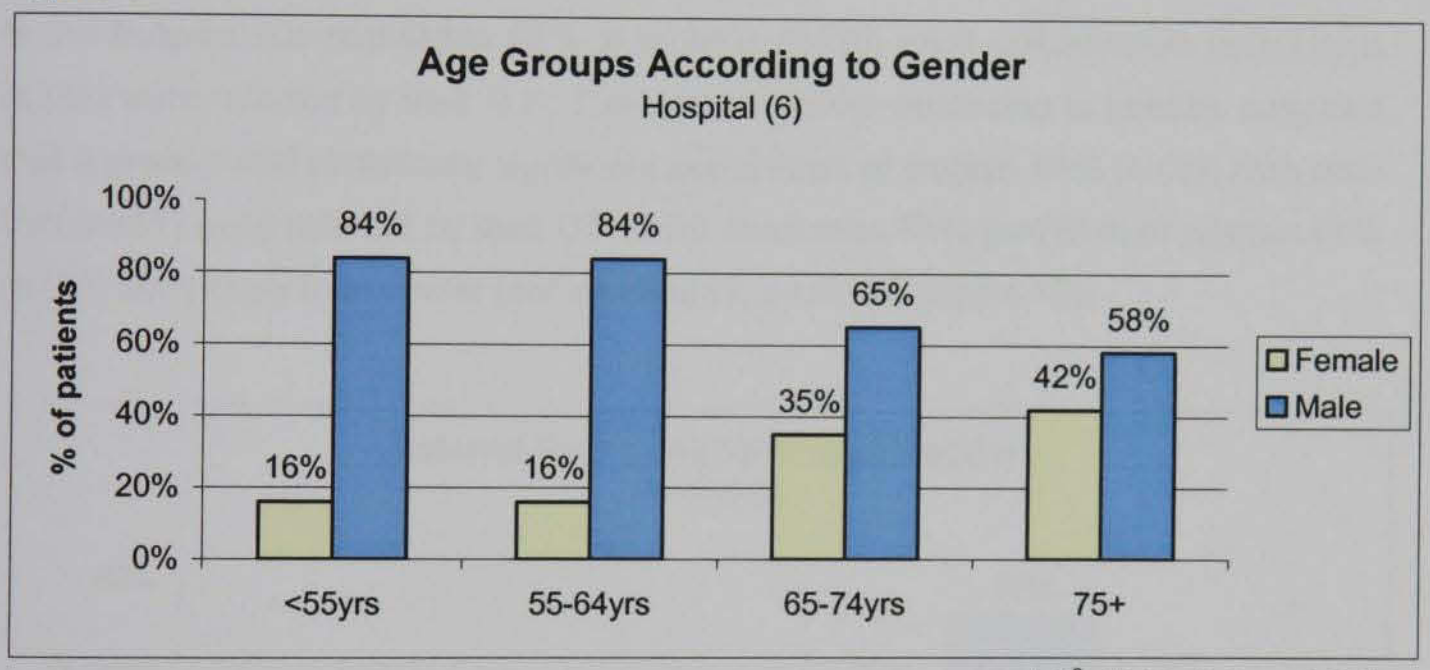
Categorical Data

Of the 890 MI patients included in the 'Dublin MATHS 2001/2 MI Census ', the sub-population from hospital (6) consisted of approximately 17% (n=147) of the total

population. Of these 147 patients, 28%(n=41) were females and 72%(n=106) were males. All patients had a working diagnosis of Myocardial infarction and this diagnosis was subsequently confirmed in 99% of the hospital (6) sub-population. The high confirmation rate of this sub-population is likely due to the timing of consent formalities (usually 2nd or 3rd day following CCU admission), which occurred after rapid testing of Troponin or other cardiac markers. The researcher was therefore more likely to be presented with those patients for whom an MI diagnosis had been clinically confirmed.

Age: The mean age of the hospital (6) sub-population (n=147) was 65 years (SD 12), with the mean age for women 70 years (SD 12), whilst the mean age of males was 63 years (SD 12), (p=.0010, 2-sample t-test). The differences within age-groups between the two sexes is also apparent (figure 8).

Figure 8

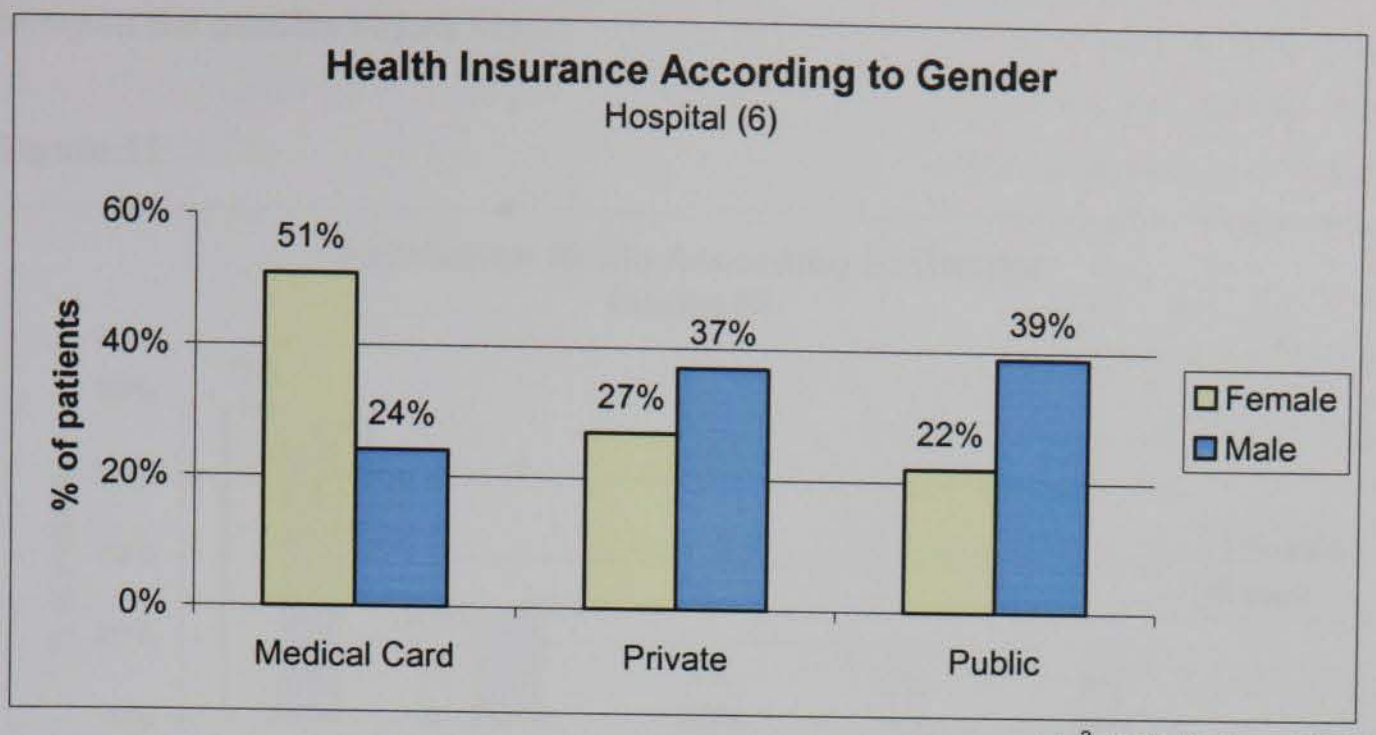


(chi^2=10.26,df=3, p=.0165)

Health Insurance Status:

In the hospital (6) sub-population, 34% (n=50) possessed private health insurance, 34% (n=50) were public patients and 32% (n=47) had medical cards. A greater and statistically significant percentage of women 51% (n=21) than men 24%(n=26), were in possession of medical cards whilst more men 37% (n=39) than women 27% (n=11) had private health insurance (chi^2=9.88,df=2, p=0071) (figure 9).

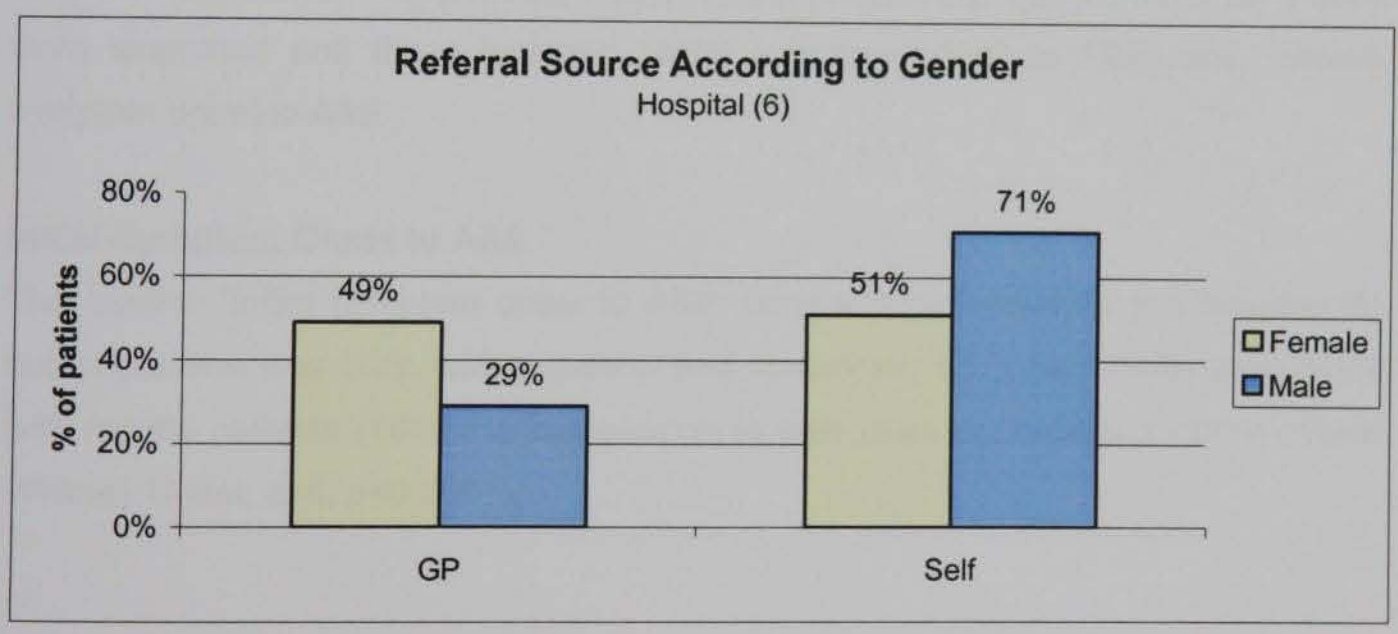
Figure 9



(chi^2=9.88,df=2, p=.0071)

Referral Source:

In the hospital sub-population 65% of patients (n=96) were self referrals whilst 35% (n=51) were referred by their G.P. The referral pattern according to gender, suggests that a greater and statistically significant percentage of women 49% (n=20) than men 29%(n=31) were referred by their GP whilst more men 71% (n=75) than women 51% (n=21) were likely to self refer (chi^2=4.98,df=1, p=.0256) (figure 10).



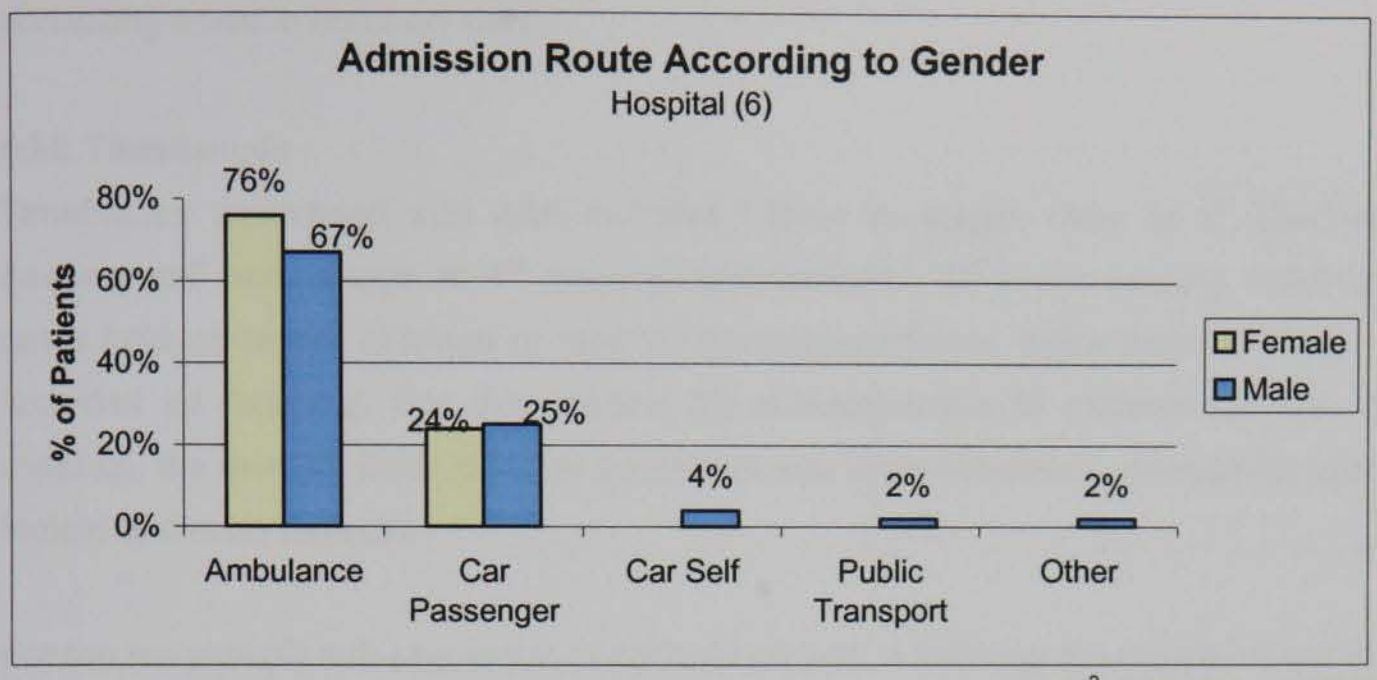
(chi^2=4.98,df=1, p=.0256)

Admission Route:

In the hospital (6) sub-population, 69% (n=102) of admissions arrived by ambulance, 25% (n=37) arrived as a car-passenger and 3% (n=4) drove into hospital. A further 3% (n=4) used either public transport or walked into hospital. The admission route

according to gender, illustrates that no statistically significant differences existed between the genders (figure 11).

Figure 11



(chi^2=3.42,df=4, p=.4893)

Pre-hospital Timeframes

Items 8-25 were mainly concerned with the timing of specific events and were thus of a continuous nature. However, due to the skewed nature of time series data, timeframe distributions for the population were described through the use of the 'median' timeframe. Two median timeframes concerning the pre-hospital period were examined and these included 'Initial symptom onset to A&E' and 'Intense symptom onset to A&E'.

Initial Symptom Onset to A&E

The median 'Initial symptom onset to A&E' timeframe recorded for the hospital (6) sub-population was 5hrs, with a greater and statistically significant delay associated with female patients (18hrs) in comparison to their male counterparts (3hrs) (Mann Whitney U-test, z=5, p<0.0001).

Intense Symptom Onset to A&E

The median 'Intense symptom onset to A&E' timeframe recorded for the hospital (6) sub-population was 3hrs, with a greater and statistically significant delay associated with female patients (7hrs) in comparison to their male counterparts (2hrs) (Mann Whitney U-test, z=3.6, p=.0003).

O'Donnell, S. (May 2003) Report to Hospital (6) CCU Staff

In-Hospital Timeframes

The in-hospital timeframes examined in this Census included (1) timeframes associated with A&E, (2) treatment timeframes and (3) timeframes associated with accessing a bed in coronary care.

A&E Timeframes

Timeframes associated with A&E included ' Door to triage', Door to 1st Medical Assessment' and 'Triage to 1st medical assessment'.[1] As some nursing /medical notes held no record of triage or medical assessment times, these data have been recorded as 'missing'. For the hospital (6) sub-population of patients (n=145, 2 missing), the median 'Door to triage' timeframe was approximately 5 minutes for both female and male patients.

For the hospital (6) sub-population of patients (n=142, 5 missing) the median 'Door to 1st Medical Assessment' timeframe was approximately 30 minutes, with a greater and statistically significant delay associated with females (42 minutes) than that recorded for males (25 minutes) (Mann Whitney U-test, z=3.78,p=.0002).

For the hospital (6) sub-population of patients (n=142, 5 missing) the median 'Triage to 1st medical assessment' timeframe was approximately 20 minutes, with a greater and statistically significant delay associated with females (25 minutes) than that recorded for males (15 minutes) (Mann Whitney U-test, z=2.76,p=.0056). (See table 2)

Treatment Time- Frames

The Census examined the rate of Thrombolytic and Aspirin administration within the group of 6 hospitals, as well as the rate of performance of Primary PTCA. The Census also examined treatment timeframes including 'Door to needle (Overall)', Door to Needle (A&E)' and 'Door to Needle (CCU).

Aspirin Administration

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[1] The use of the term "Door" throughout this report, refers only to the timing of patient "registration" as documented on the A&E admission card. It does not include the time-frame from entry to A&E to patient registration, and as such, information pertaining to this pre-registration time-frame remains incomplete.

Of the hospital (6) sub-population (n=147), approximately 99% of patients received Aspirin with a greater yet non-significant (statistical) number of males 100% (n=106) receiving Aspirin, than their female counterparts 98% (n=40) (chi^2=2.603,df=1, p=.1067).

Primary PTCA

Of the hospital (6) sub-population (n=147), approximately 27% (n=40) of patients received Primary PTCA with a greater yet non-significant (statistical) number of male patients 29% (n=31) receiving this treatment in comparison to their female counterparts 22% (n=9) (chi^2=.7941,df=1, p=.3728).

Thrombolytic Administration

The rate of thrombolytic administration among the hospital (6) sub- population was 29% (n=42), with a greater yet non-significant number of females 32% (n=13) receiving this treatment in comparison to their male counterparts 27% (n=29) (chi^2=.274,df=1,p=.6007). Many reasons were cited for non-administration of thrombolysis in the hospital (6) sub-population who did not receive treatment (n=105) (table7).

Table 7
Cited Reasons for Non-Administration of Thrombolytic Therapy

Cited Reason→	Unknown	Too Late	ECG Ambiguous	Contra-indications	Primary PTCA	NSTEMI
Number of patients (n=105)*	12	23	16	12	36	26
% of non-thrombolysed patients	11%	22%	15%	11%	34%	25%

*NB: More than one reason cited for some patients

When considering the number of patients who were contra-indicated for thrombolysis (including NSTEMI), then the number of non-contraindicated patients who could potentially receive thrombolysis = 109 (i.e. 147- 38). As 42 patients received thrombolysis, the rate of thrombolytic administration of non-contra-indicated patients is approximately 39%. Furthermore, when taking into account the numbers of

patients who received Primary PTCA (27% of total sub-sample), the reperfusion rate of the hospital (6) sub- population increases substantially.

Door to Needle Delays

The overall median 'Door to Needle' for the hospital (6) sub-population (n=42 thrombolysed patients) was 73 minutes with a greater yet non-significant delay experienced by women 105 minutes (n=13) in comparison to their male counterparts 70 minutes (n=29) (Mann Whitney U-test, z=1.86,p=.0625). 'Door to Needle (A&E)' and 'Door to Needle (CCU)' timeframes were also examined (Table 8).

Timeframes Associated with Accessing a bed on CCU

Of the hospital (6) sub-population (n=147), the median timeframe from A&E to CCU was 3hrs with a greater and statistically significant delay experienced by female patients 3.6hrs (n=41) in comparison to their male counterparts 3.2hrs(n=106) (Mann Whitney U-test, z=2.00,p=.044).

Table 8

Summary of Median Myocardial Care Pathway Delays Hospital (6)

(According to Gender)

	Initial Symptom Onset to A&E	Intense Symptoms to A&E	Door to Nurse Triage	Door to 1st Medical Assessment	Nurse Triage to 1st Medical Assessment	Overall Door to Needle	Door to Needle (A&E)	Door to Needle (CCU)	A&E to CCU
Hospital (6) Sub-Population (n=147)	5hrs	3hrs	5mins	30mins	18mins	73mins (n=42)	57mins (n=31)	182mins (n=11)	3.48hrs
Females (n=41)	18hrs	7hrs	5mins	42mins	24mins	105mins (n=13)	70mins (n=7)	197mins (n=6)	3.68hrs
Males (n=106)	3hrs	2hrs	5mins	24mins	12mins	70mins (n=29)	51mins (n=24)	90mins (n=5)	3.2hrs
Gender Differences	***	**	N.S	**	**	p=.06	N.S.	N.S.	*

Mann Whitney U-test
N.S.=Non-significant
* p<.05
** p<.01
* ** p<.0001

Appendix VII

Census Record

CCU Cardiac Census Record

Date	*Patients Name*	*Patients Number*	*Census Completed*	*Census Collected*
27.12.01	Joan Bloggs	12345678	Yes	29.12.01

Appendix VIII

Evaluation of Census Form

Evaluation of Myocardial Infarction Census Form (Pilot Study CCU Staff AMNCH)

Dear CCU staff, I would appreciate if you would take a few minutes to complete the following, so that I can evaluate the Census Form from your perspective. Your ideas and suggestions are invaluable, and will guide any amendments I make prior to the main study.

Q1: On average how long did it take you to fill out the form?

(a) <2mins (b) <5mins (c) <7mins (d) <10mins

(e) Other , please specify.....

Q2: How would you best describe the process of completing the Census form ?

(a) Easy (b) Some minor difficulties

(c) Some major difficulties (d) Very difficult.

Please Specify .....
.....
.....
.....
.....

Q3: Please comment on whether you approve/disapprove of the following form specifics

1.**Colour (pink):** (a) Approve (b) Disapprove

Please comment.....

2.**Background art (heart)**: (a) Approve (b) Disapprove

Please comment:.....

3.**Form Layout**: (a) Approve (b) Disapprove

Please comment:.....

Q4: Please state any suggestions for improving the patient information yielded from the form.

.....
.....
.....
.....
.....
.....
.....

Q5: How would you best describe the information sessions given to CCU staff by the researcher prior to pilot study commencement?

(a) Satisfactory (b) Unsatisfactory (c) Didn't Attend

Q6: Please state any suggestions for improving the information sessions given to CCU staff.

.....
.....
.....
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.....
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.....

When completed, please place the evaluation form in the envelope provided and send via internal post.

Thank you so much for your help

.....

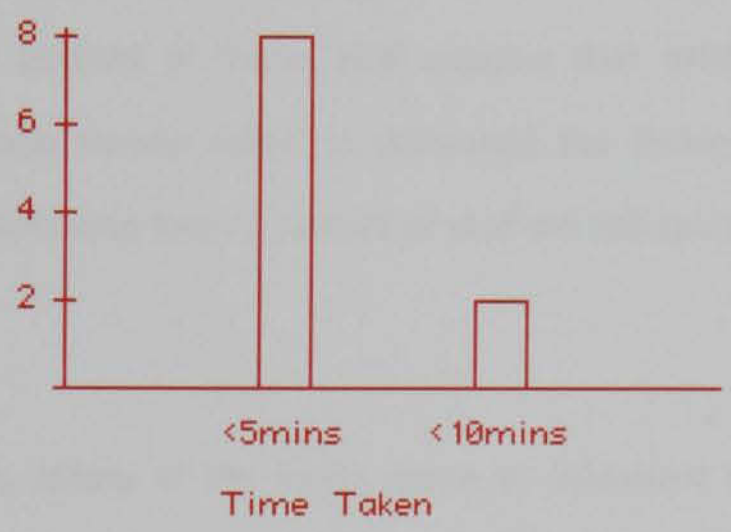
Sharon O' Donnell

Face Validity

In order to ascertain face validity of the Census form (a judgement of what the tool appears to measure), the ten CCU staff who were involved in completing the 14 Census forms, were asked to evaluate the form (appendix III) following the pilot study period. Staff evaluated the length of time taken to complete the form, the ease or difficulty of form completion, and also commented on form layout, colour and art work. Staff also had the opportunity to suggest improvements to both the census form and the information sessions provided prior to study commencement.

Question 1. On average how long did it take you to fill out the form?

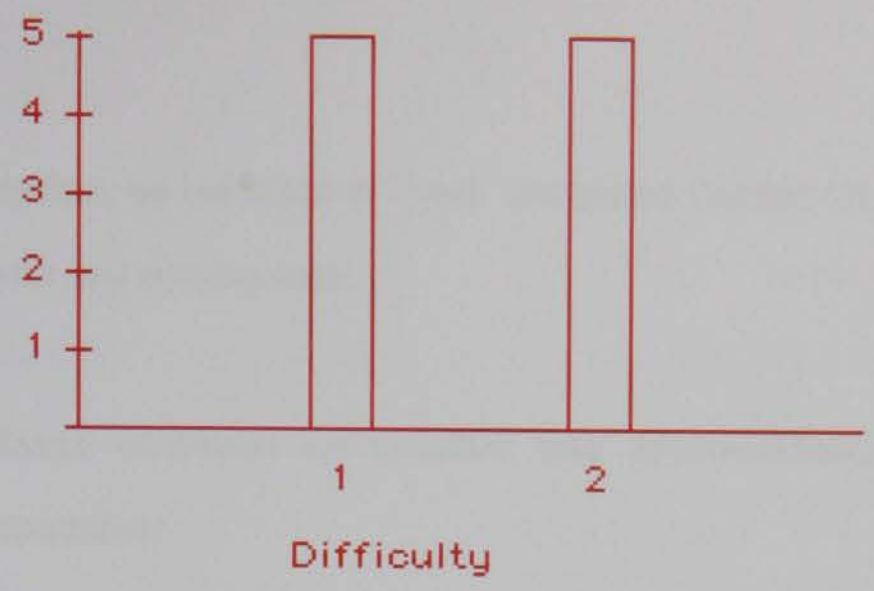
Figure 12.



Results of the Pilot study evaluation suggest that 80% of staff took less than 5 minutes to complete the Census form. The remaining twenty percent took less than 10 minutes to complete the form, with one staff nurse suggesting that this duration decreased with subsequent form completion.

Question 2. How would you best describe the process of completing the Census?

Figure 13.



1= easy, 2=some minor difficulties

Fifty percent of staff completing the evaluation, describe the Census form as "easy" to complete. The remaining staff suggest that some minor difficulties were encountered. Thirty percent of these staff suggest that difficulties arose when medical staff or triage nurses failed to document the timing of the respective assessments. The remaining twenty percent of staff did not specify where the minor difficulties arose.

In one census form, failure of the triage nurse to document the time of her/his assessment caused some difficulties with form completion. In a subsequent set of notes, the medical staff failed to document the time of initial medical assessment, and once again form completion was considered more difficult. In response to this and future omissions of assessment timing, the following procedures were implemented.

- During information sessions prior to the main study commencement, staff were informed of the potential for "missing" or "buried" data. Due to the extra burden already imposed on staff by Census form completion, it was

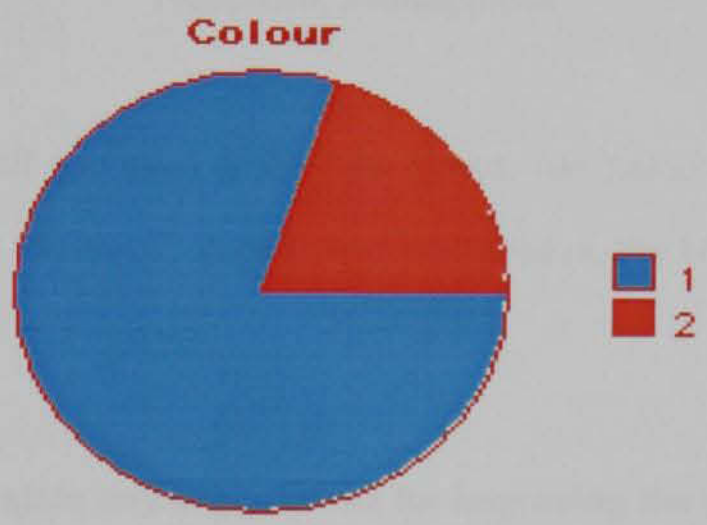
suggested that if data was not easily available, then these sections should be left blank.

- The researcher, on collection of "near" completed Census forms would scan the notes for any missing data.

Question 3: Please comment on whether you approve/disapprove of the following form specifics:

(a) Colour (pink):

Figure 14.



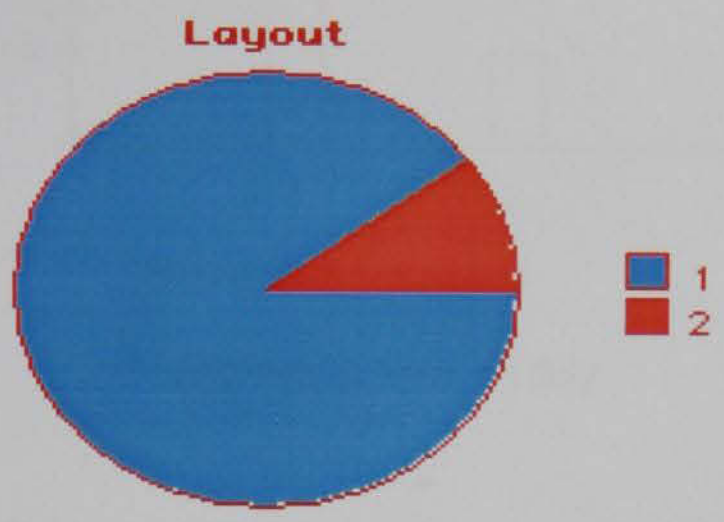
1=approve, 2=disapprove

Eighty percent of staff approved of the colour. Ten percent suggested that the colour was difficult to work with.

(b) Background Art (Heart): 100% of staff approved the background art.

(c) Form Layout:

Figure 15



1=approve, 2=disapprove

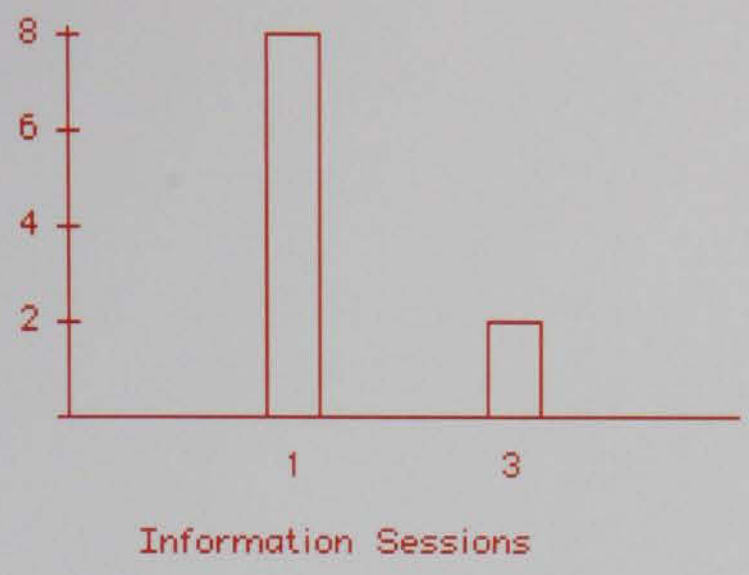
Ninety percent of staff approved of the form layout. Ten percent of staff suggested that the "boxes were too small". In response to this issue, the boxes were increased by two font sizes.

Question 4: Please state any suggestions for improving the patient information yielded from the form:

Eighty percent of staff made no additional suggestions. Ten percent of staff suggested that the form was "detailed enough", whereas ten percent suggested that the form was "too time-consuming already".

Question 5: How would you best describe the information sessions given to CCU staff by the researcher prior to pilot study commencement?

Figure 16



1=satisfactory, 3=not on duty

Eighty percent of staff suggested that the information sessions were satisfactory. The remaining twenty percent of staff had not been on duty when sessions were running.

Question 6: Please state any suggestions for improving the information sessions given to CCU staff?

Ninety percent of staff suggested that no improvements were necessary. Ten percent recommended some suitable times to hold information sessions, and suggested that e-mailing information to individual staff members may assist in the dissemination of any future information.

Appendix IX

Field Journal

Field Journal Excerpts

	Code
Woman: aged 64	
This lady told me that she had really bad indigestion	1
for about 3 days	3
didn't want to go to a doctor as she hadn't time	4,5
she was minding her grandchildren.	4
She took some Rennies and it seemed to help her.	6
She became really afraid when she couldn't catch her	7
breath, and her chest became tight	26
she rang her son, who came to her house and drove	9,10
her into hospital.	
Didn't receive thrombolysis - NSTEMI	18
Man aged 72:	
This man was out in his garden building a wall	11
when he his chest became tight	2
he thought it was the cold air hitting his lungs.	1
He became dizzy and started sweating – he had to sit	2,6
down for a while and catch his breath.	2
The symptoms passed but he didn't want to tell	13
anyone	
his wife is in hospital at the moment and all his	11
children are worried about her – he didn't want to add	13
to this.	
Later that evening following his tea, his chest became	11
really tight and again he couldn't breath	8, 26
he was frightened.	7
He called to his neighbour who rang an ambulance.	28
Didn't receive thrombolysis - NSTEMI	18
Man aged 57:	
This man was driving his 2 grown-up children to the	11
airport when he started to have chest discomfort.	2
He didn't mention it to his children at first	13, 5

but just started to rub his chest.	6
When they arrived at the airport he felt really unwell – started sweating and the pain became really bad.	26
An ambulance crew at the airport was called and he was rushed into hospital.	15, 10
Received thrombolysis	18
Man aged 70:	
Spoke to a man today, who told me that he began to get chest pain when he was walking into hospital to visit his friend.	11
He has a history of angina, and this sort of thing happens to him all the time. He usually stops walking and takes a GTN spray	16 6
However, it didn't work this time the pain became worse and he couldn't breath.	8, 26
He flagged down a taxi and got into A&E within minutes	17, 10
apparently he collapsed when he arrived into A&E (experienced a cardiac arrest).	18
Feels extremely lucky to be alive – reckons that all the circumstances went his way – he could easily have died if he had been alone at home	19
Seems really shook be the whole experience.	19
Received thrombolysis	18
Woman aged 82:	
Spoke to a lady today who still can't believe she had a heart attack.	20
By the sounds of things, its seems as though she's been feeling unwell for quite some time and progressively getting worse.	2 3 8
She has been feeling really tired and washed	2

out but was putting it down to her age – she thought	1
she was coming down with the flu.	1
Visited her friend who told her that she needed to go	28
the GP	12
she didn't want to.	5
She reckons that she's very independent, and	22
seems quite proud of this attribute.	
Decided that she'd put herself on a 'tonic'	6
but became extremely sick one evening following her	14
evening meal – she said it was like a great big ball of	8
'wind' trapped inside her chest	26
she was convinced she had ulcer!	1
She rang her GP but only the 'on-call' man was there	17,12
– so he came to visit her, and called the ambulance.	10
They gave her something in A&E (probably morphine)	18
and she hasn't had a pain since	
she still doesn't believe that she has had a heart	20
attack – she reckons that they're all making a fuss	13
over nothing!	
Didn't receive thrombolysis –too late!	18
Man aged 61	
Woke up at 06:30 with severe chest pain – was	2
terrified!	6
Told his wife who apparently said that he was the	9
colour of death.	1
She immediately rang an ambulance and they arrived	9, 10
about 20 minutes later – he reckoned that it was the	
longest 20 minutes of his life – he really felt that he	7, 19
was going to die!	18
Had great praise for both the ambulance	

crew and the A&E staff – reckoned that they all saved his life.	**19,**
He said that the treatment in A&E was super efficient and that they deserve every penny they get – he thought that he'd have to wait but was seen to straight away!	**18**
He is a heavy smoker but didn't think he was a	**23**
candidate for a heart attack – keeps himself fit –	**29**
reckons that he's now never going to smoke again!	**27**
Received thrombolysis.	**18**
Woman aged 58:	
Spoke to a woman today who has had chest	**2**
discomfort on and off for a few days.	**3**
She thought it was ingestion, as she frequently suffers	**16**
from it. She tried Maalox and tried to ignore it –	**6, 30, 20**
sometimes the Maalox worked –	**16, 6**
what confused her was	**24**
that the pain seemed to occur after she had eaten –	**24, 11**
she was convinced it was a 'stomach problem or	**1**
upset.	**17**
She reckoned that she was thinking about going to her GP but	**12**
didn't feel it was that serious initially –	**30**
anyway, she was too busy to think about it – works fulltime	**4** **4**
and takes care of her grandchildren sometimes.	**4**
When she was leaving work for the evening the pain became really	**11**
intense and she couldn't get relief	**26, 21**

tried sitting down – she drank some coke	**6**
to make her 'burp' and it helped a bit! She	**27**
asked her co-worker to take her to hospital	**7**
because she was becoming a little	**21**
scared – she began to think it was something more serious.	
Never thought of ringing an ambulance – didn't want	**27, 13, 5**
blue lights flashing and everyone talking about her!	
She said 'I'd feel really embarrassed to go in an	**19, 10**
ambulance'	**29**
Never thought she'd be the type to have a heart	**23**
attack, doesn't drink but smokes about 20 per day -	**19**
she feels a little shell-shocked now.	
Woman aged 48:	
Spoke to a lady today who started feeling very unwell	**2**
about 4 days ago.	**3**
Put it down to the menopause as she mainly felt	**1, 16**
exhausted and a little light-headed.	**2**
Took a day off work to try to shake off her illness but it	**6**
progressively became worse.	**8**
Experienced back pain and left arm pain but didn't	**8, 26**
associate it with a heart attack.	**24**
She began to get frightened when she lost her	**7, 8**
colouring and began to sweat and felt faint.	**8, 26**
Eventually said it to her friend and she suggested that	**28**
she call a doctor.	**12**
She rang the doctor who called an ambulance for her	**7, 10, 12**
– she said that she initially argued with the doctor	**5**
because she was too embarrassed to go in an	**13, 27**
ambulance. She didn't think it was that serious.	**30**
She never thought she would be a likely candidate –	**29**
she didn't think women were likely to have a heart	**31**
attack – generally thought it would be business men!	**31**
Knew only one woman who had a heart attack but she	**32**
died. She's quite upset.	**19**

Open Coding of Field Notes

Code	Meaning
1	Interpretation
2	Initial Symptoms
3	Duration of symptoms
4	Caring for others/responsibilities
5	Wanting to stay in control
6	Self-treatment
7	Fear
8	Worsening symptoms
9	Influence of family
10	Mode of transport to hospital
11	Context of event
12	GP
13	Not wanting to make a fuss
14	Precursor to event
15	Presence of others
16	Co-morbidity
17	Cognitive response
18	Hospital context
19	Emotional response
20	Denial
21	Re-appraisal
22	Psychological factors
23	Risk factors
24	Mismatch of symptoms
25	Self diagnosis
26	Intense symptoms
27	Social messages
28	Influence of friends
29	Perceived Risk
30	Trivialising Symptoms
31	MI Victims
32	Female Role Models

Emergent Lower Order Categories and Sub-categories from Field Journal

Context of the experience:

- Context of event
- Precursor to event
- Presence of others

Description of Symptoms

- Initial Symptoms
- Intense symptoms
- Duration of symptoms
- Worsening symptoms

Labelling Symptoms:

- Interpretation
- Mismatch of symptoms
- Self diagnosis
- Trivialising Symptoms
- Co-morbidity

Dealing with Symptoms:

- Self-treatment
- Social Roles
- Wanting to stay in control
- Cognitive Response
- Re-labelling
- Not wanting to make a fuss

Impact of symptoms:

- Fear
- Emotional response
- Denial

Emergent Lower Order Categories and Sub-categories from Field Journal

Influence of others:

- Influence of family
- Influence of friends

Beliefs about personal risk:

- Psychological factors
- Social messages
- Perceived Risk/ Risk factors
- Perceived MI Victims

Calling for help:

- Mode of transport to hospital
- GP
- Hospital context

Emergent Higher Order Themes
and Sub-Themes from Field Journal Analysis

Stimulus:

- Context of the event
- Initial and ongoing symptoms
- Presence of others

Interpretation:

- Labelling of symptoms
- Mismatch of symptoms
- Perceived personal risk
- Positive Role Models

Response:

- Psychological factors/emotional response
- Cognitive Response
- Caring for others/responsibilities
- Locus of control
- Influence of laypersons
- Reasons for choosing
    - (1) referral source and
    - (2) admission route

Appendix X

A Closer Look at Comparisons

A Closer Look at Comparisons

The following section compares the findings between the six individual Dublin MATHS hospitals and also between the findings of the present census with those of 1992 and 1994. Individual hospital results are anonymised and hospitals are arbitrarily assigned a code from 1 to 6.

Results:

In total, 890 patients with a confirmed diagnosis of MI were included in the Dublin MATHS 2001/2 MI Census. Table 9 outlines the patients characteristics in the present study compared to the Censuses of 1992 and 1994.

Table 9

A Comparison of 3 Censuses			
Table 9	**National MI Census 1992**	**National MI Census 1994**	**Dublin Maths MI Census 2001/2**
Duration:	1 week	7 months	12 months
Sample/Population	109 MI Patients	620 MI Patients	890 MI Patients
Age mean (SD):			
Female:	68	69(11)	69(12)
Male:	61	64(12)	61(12)
Referral Source:			
Self:	Not	24%	69%
GP:	available	69%	28.5%
Other		7%	2.5%
Admission Route:			
Car Passenger:	40%	42%	30%
Car Self:	16%	8%	5%
Ambulance:	44%	46%	61%
Public Transport/Other:	0%	4%	4%
Insurance Status			
Private			37%
Public	Not	Not	34%
Medical Card	Available	Available	29%

Pre-hospital Timeframes:

The Census calculated two pre-hospital timeframes, *'Initial symptom onset to A&E'* calculated the time from the reported beginning of symptom onset to the time of registration time A&E. The median timeframe from initial symptom onset to A&E was 4 hours (IR: 1hour 30 minutes to 17 hours) for the total Dublin MATHS 2001/2 MI participant group. *'Intense symptom onset to A&E'* calculated the time when the symptoms became intense, to registration in A&E. Median timeframe from 'intense symptom onset' to A&E for the Dublin MATHS 2001/2 MI participants was 2 hours (IR: 1 hour 10 minutes to 5 hours 15 minutes).

A&E Timeframes:

A number of timeframes were calculated in the A&E pathway. The median 'door to triage' timeframe was 6 (IR: 1 to 14) minutes. Patients arriving by ambulance were more likely to be triaged within 15 minutes than patients arriving to hospital by any other admission route, odds ratio 2.16 (CI: 1.50, 3.10). These findings remained significant following multivariate analysis of this timeframe. The median 'door to medical assessment' timeframe for the total group was 24 (IR: 10 to 56) minutes with significant variation evident amongst the six Dublin MATHS ($p<0.0001$). Patients arriving by ambulance were more likely to experience their first medical contact sooner than those patients arriving to hospital by any other route, odds ratio 1.98 (CI: 1.45, 2.70). These findings remained significant following multivariate analysis of this timeframe. Table 10 outlines the variation in A&E timeframes according to admitting hospital.

Table 10 A&E timeframes according to admitting hospital.

Hospital→ Timeframe↓	Hosp 1	Hosp 2	Hosp 3	Hosp 4	Hosp 5	Hosp 6	p value
Door to Triage	6 minutes	8 minutes	4.5 minutes	6 minutes	11 minutes	5 minutes	<0.005
Triage to Medical Assessment	17.5 minutes	10 minutes	10 minutes	10 minutes	15 minutes	20 minutes	<0.006
Door to Medical Assessment	28 minutes	21 minutes	15.5 minutes	25 minutes	26 minutes	30 minutes	<0.001

Aspirin Administration:

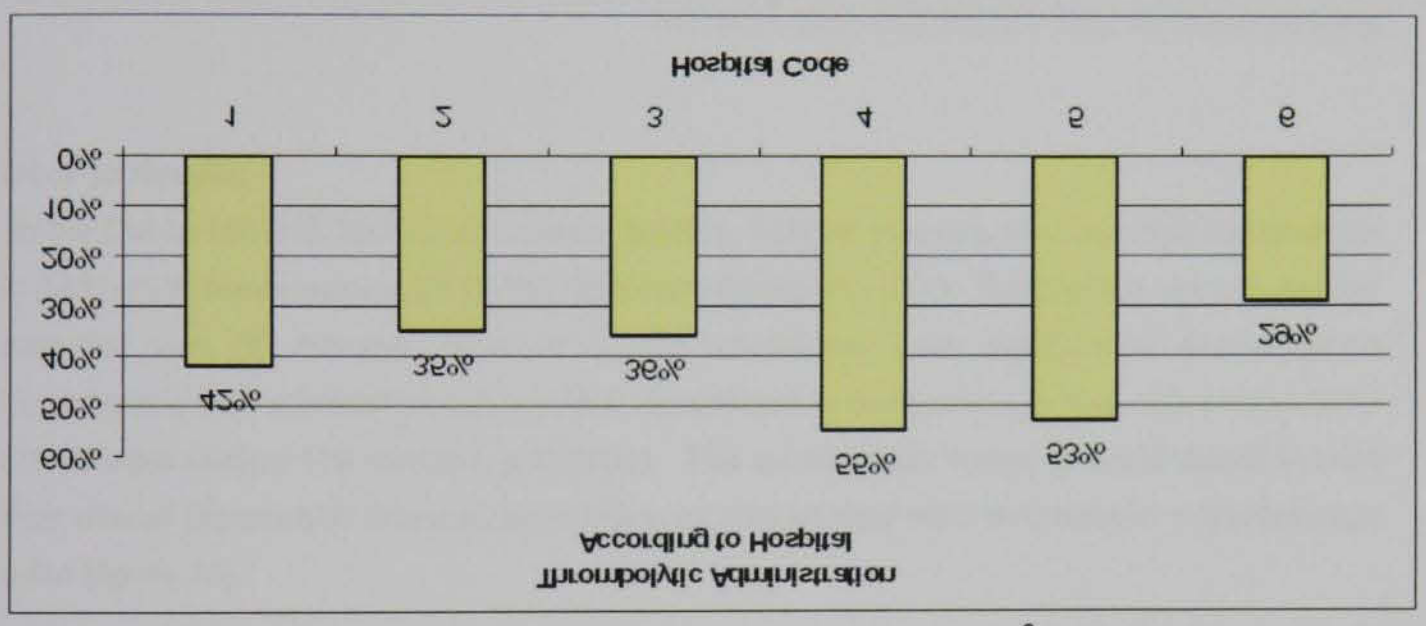
Aspirin was administered to (n=837, 94%) of patients in the present study. The median 'door to Aspirin' timeframe was 40 (IR: 15 to 105) minutes. The A&E department was the site of (n=729,82%) reports of documented Aspirin administration, with 24 (3%) of patients

documented as receiving their treatment in an ambulance, (n= 43, 5%) received their treatment in CCU whilst for a further (n= 94, 10%) patients, Aspirin was either self administered or administered by the G.P. A sub-group analysis by referral source suggests that of the 319 patients referred by their G.P. only (n=45, 14%) of patients stated that they received Aspirin from their G.P.

***Thrombolysis*:**

Thrombolytic therapy was administered to (n=359, 40%) of the total Dublin MATHS 2001/2 MI participants. Figure 17 illustrates the variation in thrombolytic administration rates between the six hospitals.

Figure 17



(chi ^{2} = 30.8,df=5, p<0.0001)

A greater percentage of patients <66 years were likely to receive this treatment than those ≥65years (47% versus 33%) (p<0.0001). Ambulance admission route to hospital was also associated with a greater rate of thrombolytic administration compared to any other admission route (p=0.0012). These findings remained significant even after controlling for other variables. Approximately (n=531, 60%) patients failed to receive thrombolysis, with many reasons cited for non-administration (table 11). When considering the contraindications for thrombolysis (including NSTEMI), then the non-contraindicated population who could potentially receive this treatment was 690 (i.e. 890-200). The rate of thrombolysis for the non-contraindicated population was therefore 52%.

Table 11

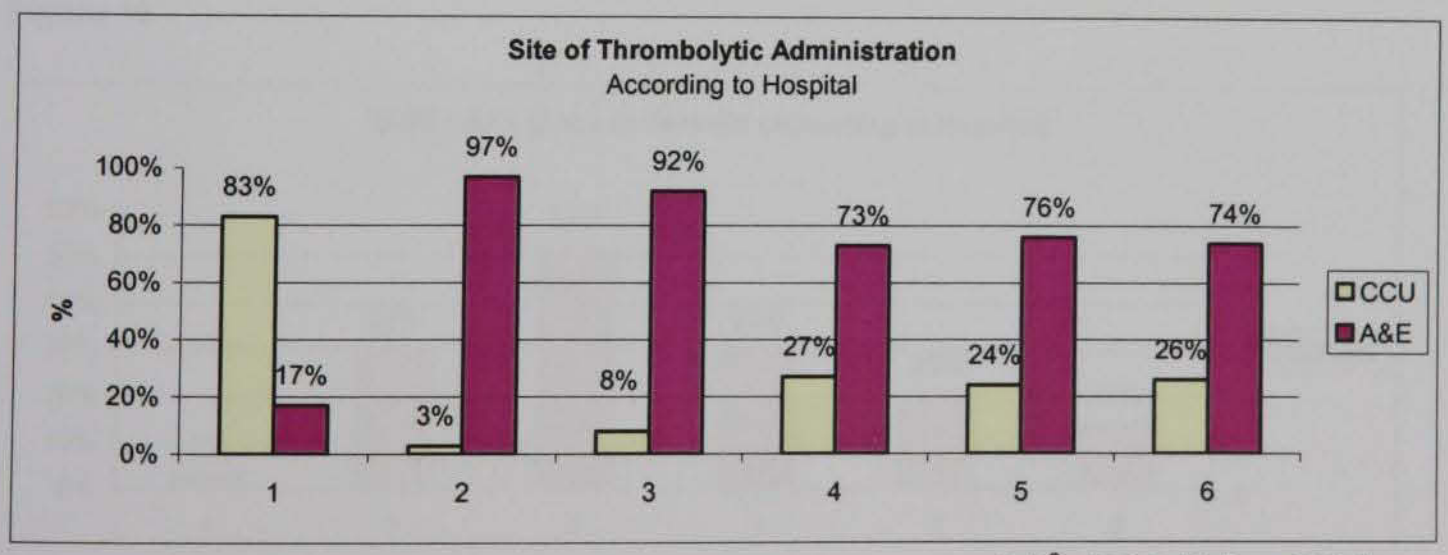
Cited Reasons for Non-Administration of Thrombolytic Therapy						
Cited Reason→	Unknown	Too Late	ECG Ambiguous	Contra-indications	Primary PTCA	NSTEMI
Number of patients (n=531)*	59	159	124	53	74	147
% of non-thrombolysed patients	11%	30%	23%	10%	14%	28%

NB: More than one reason cited for some patients

Door to Needle:

In the Dublin MATHS 2001/2 MI Census, (n=261, 73%) of patients received their thombolysis in A&E whilst the remaining 98 (27%) received treatment in CCU. The median 'door to needle' recorded was 60 minutes, however overall timeframes were significantly shorter when thrombolysis was administered in the A&E department in comparison to that delivered in CCU (39 minutes versus 119 minutes, p<0.0001). The six hospitals varied to some extent in both their overall thombolytic administration rates, as well as their A&E thrombolytic administration rates (figure 18).

Figure 18



(chi^2=122.4,df=5, p<0001)

Those hospitals with highest A&E administration rates had shortest 'door to needle' times (table 12), whilst the longest median 'door to needle' (86 minutes) was recorded in the hospital which administered 83% of thrombolytics in CCU.

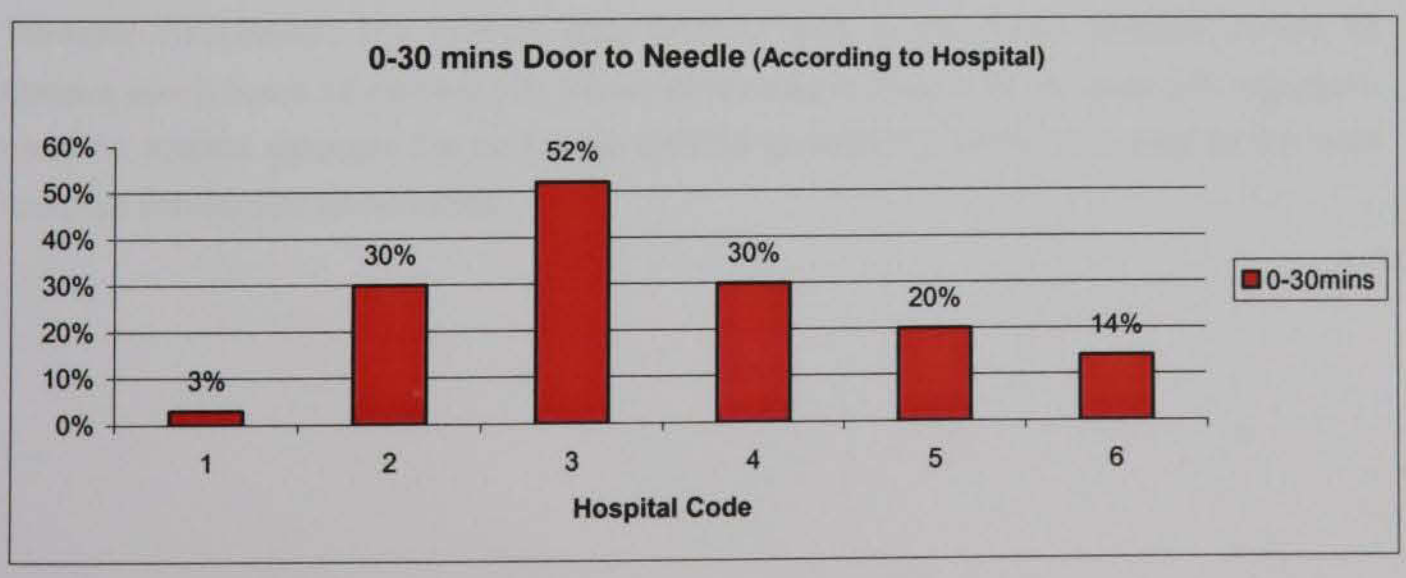
Table 12

'Door to Needle' According to Hospital and Site of Administration				
Hospital Code	**Rate of thrombolysis**	**Site of Thrombolysis**		**Median Door to Needle (minutes)**
		A&E	**CCU**	
1	42%(n=58)	17%	83%	86
2	35%(n=69)	97%	3%	40
3	36%(n=61)	92%	8%	26
4	55%(n=46)	73%	27%	50
5	53%(n=80)	76%	24%	75
6	29%(n=42)	74%	26%	73

(chi ^{2} = 30.8,df=5, p<00001)

Only (n=103, 29%) of thrombolysed patients received their treatment within the recommended door to needle time of <30 minutes. Hospitals with higher rates of A&E administration were likely to have a higher percentage of patients receiving thrombolysis within 30 minutes. Figure 19 illustrates the percentage of thrombolysed patients who received their treatment within 30 minutes, according to admitting hospital.

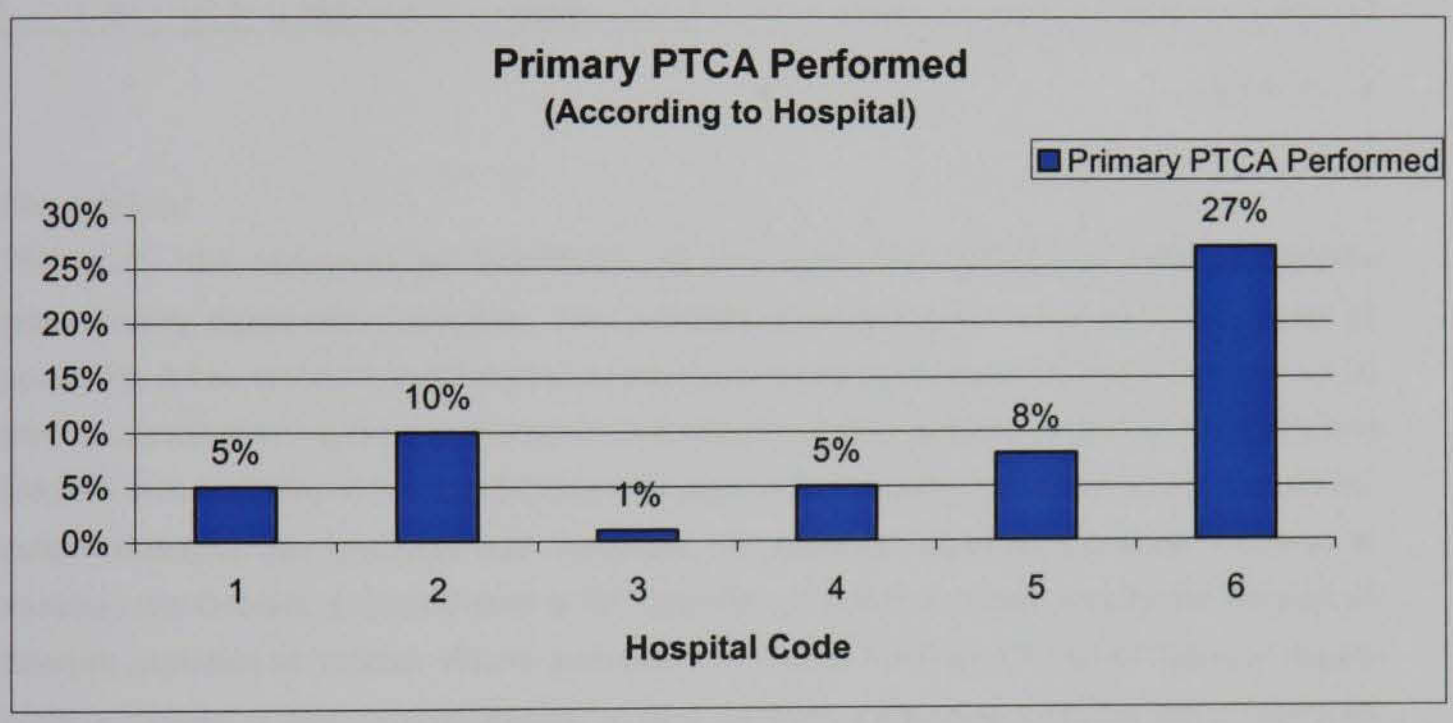
Figure 19



(chi^2=43.6, df=5, p<0.0001)

***Primary PTCA*:** In the Dublin MATHS 2001/2 MI Census, (n=85, 9.5%) of the total population received primary PTCA as an alternative to, or in conjunction with, thrombolytic therapy. The median 'door to PTCA' timeframe was 2 (IR: 1.1 to 3.3) hours. When calculating the thombolytic rate of non-contra-indicated population (52%) in addition to the rate of Primary PTCA (n=85, 9.5%) of total participants, then the reperfusion rate of the Dublin MATHS 2001/2 MI Census increases substantially, to approximately 61%. Multivariate analysis suggests that patients ≥65 years were significantly less likely to receive Primary PTCA, than those <66 years (7% versus12%) odds ratio 0.47 (CI: 0.28, 0.81). The time of day (08.00-18:00) was an independent factor affecting procedural rate (p<0.0001), as was the admitting hospital (p<0.0001) (figure 20).

Figure 20



(chi^2=72.4,df=5, p<0.0001)

Transfer Timeframe: The median '*door to CCU*' time in the Dublin MATHS 2001/2 MI Census was 3 hours 12 minutes (IR: 1 hour 42 minutes to 5hours 24 minutes) with significant variation evident amongst the six Dublin MATHS (p<0.0001). Table 13 illustrates the wide variation between all six hospitals

Table 13

Door to CCU (According to Hospital)					
Hospital	**Count**	**Mean(hrs)**	**Median (hrs)**	**StdDev**	**Range**
1	138	6.71	**3.41**	11.66	106.08
2	198	5.92	**4.20**	5.82	38.57
3	168	4.47	**3.00**	6.70	56.47
4	85	3.71	**1.57**	5.23	31.16
5	154	3.91	**3.03**	3.40	17.9
6	147	4.82	**3.48**	6.02	52.78

($p<0.0001$).

Discussion:

This study has examined the timeframes located along the pathway of care for patients experiencing myocardial infarction. The pathway extended from initial symptom onset to accessing a bed on CCU and included accounts of pre-hospital and in-hospital timeframes as well as reperfusion regimes. A representative sample of 890 patients attending the six Dublin MATHS was included in the 2001/2 Census, making it the largest study of an MI population, solely attending this group of Irish hospitals. To allow for possible seasonal variation to emerge, the Census extended over a full calendar year and is subsequently the longest MI Census available in Ireland. Where possible, the Dublin MATHS 2001/2 MI Census results were compared to international studies, as well as those emanating from the two National MI Censuses of 1992 (O'Callaghan et al 1995) and 1994 (McGee et al 1996).

Pre-hospital Timeframes: Although no other Irish study has identified the existence of 'initial symptoms', it is an important issue to consider when educating patients about help-seeking behaviour. The median time of 2 hours for 'intense symptom onset' to A&E, is a significant improvement to the most recent median 'pain to door' delay of 3hrs for confirmed MI patients, reported in the National MI Census of 1994 (McGee et al 1996). Although the Dublin MATHS 2001/2 MI Census is purely a snapshot of the pre-hospital delays of the six MATHS, it perhaps reflects the impact of previous and present health policies to reduce care pathway delays for this population of patients. However, 50% of the Census population experienced pre-hospital delays greater than 2 hours and this suggests a need for continued public health awareness in this area.

Admission Route: The Dublin MATHS 2001/2 MI Census highlights an increase in the use of ambulance as a mode of admission from 44% in 1992, 46% in 1994 to 62% in this the most recent Census population. Although improvements can be seen in the use of emergency services, any educational initiatives regarding admission route to hospital during an acute cardiac event, must continue to encourage the use of ambulance services above all other admission routes. This route is likely to reduce care-pathway delays and will save lives. For a more comprehensive picture, future comparative studies may wish to examine ambulance response times.

A&E Timeframes: Improvements in 'nurse triage' and '1st medical assessment' timeframes are required. Although recommendation R8.4 of the Cardiovascular Health Strategy, advocates for a door to needle time of 30 minutes (Department of Health & Children 1999), it would seem that many patients had failed to obtain even their first medical assessment within this time-period. This protracted median timeframe (24 minutes) is in urgent need of clinical review.

Aspirin: The percentage of patients receiving Aspirin in the six Dublin MATHS (94%) is lower than the average European rate of 96% reported in the ENACT study (Fox et al 2000) and the combined Irish/UK rate of 96%(n=639). The recorded site for Aspirin administration was predominately A&E (82%), with some documentation of Ambulance administration (3%). Administration of Aspirin by ambulance crews was under pilot in some Dublin hospitals and higher rates of documented Ambulance administration may ensue when this practice is fully established. However, the sub-group analysis by referral source, suggests that less than 14% of patients referred by their G.P. were administered Aspirin by the G.P. In the absence of further explanatory data, these findings suggest that this apparent under-usage of Aspirin by GPs is inappropriate and in urgent need of review.

Thrombolysis: Thrombolytic therapy was administered to (n=359, 40%) of the Dublin MATHS 2001/2 MI Census participants. This compares unfavourably with the two previous Censuses, with 49% of Dublin MI patients in the 1992 Census[9] and 58% of MI patients in the 1994 Census receiving thrombolysis. However when reviewing the reasons for non-administration of thrombolysis, it is clear that the diagnosis of a Non ST Elevation MI (NSTEMI) was one of the main reasons (28%) for non-administration of thombolytics in the 2001/2 Census. Unfortunately, neither of the two previous Censuses commented on the NSTEMI variable and so comparative analysis is impossible at this stage. However, the identification of NSTEMI (17% of 2001/2 population), which had previously gone unreported, may have contributed to the present numbers of MI patients who were contra-indicated for receiving thrombolytic therapy. The thrombolytic rate for non-contra-indicated patients was 52% and although this compares favourably with the average European reperfusion rate

(51%) reported in the ENACT (Fox et al 2000) study, it is less than that reported for the combined Irish/UK thrombolytic rate of 73%.

Door to Needle: The median 'door to needle' recorded in the Dublin MATHS 2001/2 MI Census was 60 minutes, which compares favourably with the 76 minutes recorded in the 1994 national Census. However, the 2001/2 Census report did not extend its examination of 'door to needle' timeframes, to include reasons for treatment delay and so information pertaining to difficulties with clinical decision making is unavailable. Future comparative studies may examine this issue in more depth and provide additional data to complete thrombolytic treatment scenarios.

While some improvements have obviously been made in reducing the door to needle time, the time delays to thrombolytic treatment are still twice that recommended by the Cardiovascular Health Strategy Group (Department of Health & Children 1999). However, the Dublin MATHS 2001/2 MI Census highlights a change in practice regarding the site of thrombolytic administration. In 1992, 16% of thrombolysis was administered nationally in A&E, with the remainder delivered in I/CCU. Only 4% of patients were administered thrombolysis in A&E in the 1994 study, with 96% delivered in I/CCU. However, in the Dublin MATHS 2001/2 MI Census (n=261, 73%) of patients received their thombolysis in A&E whilst the remaining (n=98, 27%) received treatment in CCU.

The 'door to needle' timeframes in the Dublin MATHS 2001/2 MI Census were significantly shorter when thrombolysis was administered in the A&E department in comparison to that delivered in CCU (39 minutes versus 1hr 59 minutes, $p<0.001$). However, only (n=103, 29%) of the 2001/2 thrombolysed patients received their treatment within this timeframe. In the absence of any explanatory data, the results of Dublin MATHS 2001/2 MI Census would suggest that the recommended '30-minute door-to-needle' standard is best served when thrombolysis is administered in A&E.

PTCA: In the Dublin MATHS 2001/2 MI Census, (n=85, 9.5%) of the total participants received primary PTCA as an alternative to, or in conjunction with, thrombolytic therapy. This compares favourably with results from ENACT (Fox et al 2000) study, which reports an average European rate of 8% and a combined Irish/UK rate of <1%. Although patients were unlikely to have access to Primary PTCA in 1992 or 1994, changes in the availability of this procedure must be taken into consideration when ascertaining the true provision of reperfusion therapy for the 2001/2 participants.

***Door to CCU*:** The task force for the European Society for Cardiology (1996), suggest that patients should be moved from the emergency department to CCU within 20 minutes of arrival to hospital, unless initiation of thrombolysis or other emergency procedures are

delayed as a result. Therefore, a median 'door to CCU' of 3.2 hours, even in the presence of high A&E thrombolytic rates, must be considered an unacceptable time for critically ill patients to wait on an A&E trolley.

Conclusion:

This 2001/2 MI Census demonstrates significant improvements in some aspects of acute coronary care since the publications of the 1992 and 1994 Censuses. New referral and mode of admission trends have emerged with more patients likely to self refer and more likely to arrive by ambulance. However, as a consequence of help-seeking delays, many patients are unlikely to avail of optimum myocardial salvaging treatment and are thus exposing themselves to greater potential complications of myocardial infarction. Strategies to improve pre-hospital delays are still urgently needed and likely to save lives.

Although the median 'door to needle' time of 60 minutes is an improvement from that of previous Censuses, it is still twice the recommended timeframe. However, the median 'door to needle' of 39 minutes achieved with A&E administered thrombolysis has important clinical implications both for the MI patient and the A&E practitioner. The protracted 1st medical assessment median timeframe (24 minutes) highlights the need and opportunity for potential improvement in hospital related delays to treatment.

Appendix XI

Permission for Strand 2

9 Newhall Court
Blessington Rd
Dublin 24

14.11.02

Re: Myocardial Infarction Care Pathways – Are delays Gender Specific

Dear Dan,

Thank you for providing me with ethical clearance to carry out the above study in the Adelaide & Meath hospital. As you are aware, I have collected quantitative data in the form of a Myocardial Infarction Census, over a period of 13 months. This included a "pilot" month, followed by an additional 12 months of data collection, which is due for completion on November 30th 2002.

These data were obtained from the 6 Major Academic Teaching Hospitals, with provisional results suggesting that female patients are statistically significantly more likely to experience pre-hospital delays than are men i.e. women who experience symptoms of a Myocardial Infarction are more likely to delay in seeking medical help for this condition than their male counterparts. (A full breakdown of individual hospital Census results will be available to each of the participating hospitals by early Spring 2003)

Although this is the first evidence of such gender specific delays in Irish MI patients, the phenomenon is not unique to Ireland. Similar results have also been found in comparative studies in the United States, Mainland Europe, Australia and the United Kingdom. These studies also suggest that the major delaying factor in women appears to be the mislabelling of atypical symptoms to a benign cause, along with the attempts by women to self–treat.

However, recommendation R7.4 of the Irish Cardiovascular Health Strategy Group states,

> "*... The time to treatment of patients with acute sustained chest pain and the reasons for delays in accessing care must be identified This baseline information should be used to establish targets for response times and for times to reach coronary care.*"
>
> (Building Healthier Hearts 1999 pp. 86)

Identifying care pathway time delays, although a useful exercise for auditing standards of care, fails to adequately address the phenomenon of treatment seeking delays. As women are more likely than men to die during hospitalisation for myocardial infarction or during the first 30 days following the event (Greenland et al

1991, Goldberg et al 1993), it is prudent at this point, to qualitatively examine the reasons why women delay in seeking treatment. It is also proposed to examine the recovery experiences of these women post MI.

In an attempt to explain the reasons why Irish women delay in seeking help, and how they experience recovery following an MI, it is proposed to carry out a qualitative examination of this phenomenon. To this end, approximately 15 female patients who have recently experienced a myocardial infarction shall be interviewed, to ascertain the causative factors for delayed help-seeking initiatives. It is hoped that a qualitative exploration of delays and recovery experiences will identify opportunities for future gender sensitive health educational strategies.

I would therefore like to request an extension to the ethical clearance, which you have kindly granted for this study to date. I hope to commence qualitative data collection from February 2003, and estimate that only 2-3 female patients from each of the 6 Dublin Academic Teaching Hospitals will be included in the study sample. I have attached an outline of the intended qualitative research proposal and patient information & consent, however if you require any further clarification, please do not hesitate to contact me.

With Kind Regards

.....

Sharon O' Donnell
Research Fellow (HRB)

Phone: 01 4622060/ 087 629 0563:

Email: odonnellsharon@eircom.net

Dan Lynch, Joint Research Ethics Committee Secretariat.
Telephone : 4142860. Fax : 4142371. Email: dan.lynch@amnch.ie

Ms. Sharon O'Donnell,
9 Newhall Court,
Blessington Road,
Dublin 24.

20th December, 2002.

RE : Myocardial Infarction Care Pathways – Are delays Gender Specific.

Please quote this reference in any follow-up to this letter : 2002 / 11 / 12

Dear Sharon,

Thank you for your letter dated 14.11.02 and I apologise for the delay in replying. The Chairman, on behalf of the Joint Research Ethics Committee, has approved the extension of the above study as described in your letter. In giving ethical approval the Chairman, in addition to reviewing your letter, also reviewed the outline of your intended qualitative research proposal and the patient information and consent documents which you enclosed.

Yours sincerely,

Daniel R. Lynch,
Senior Executive Officer.

College of Nursing
Ext: 2891
27.02.01

Dear Director of Nursing,

As you know, I am presently undertaking my Masters in Science by Research in Trinity College Dublin, and I wish to seek your permission to undertake this research at AMNCH. The proposed research study for this award is entitled "Myocardial Infarction Care Pathways – are delays gender specific?" I have enclosed a copy of my proposal for your attention.

The purpose of the proposed research is to carry out recommendation R7.4 of the Cardiovascular Health Strategy Group, by examining the care pathway delays for patients with myocardial infarction. Recommendation R7.4 states,

> *"... The time to treatment of patients with acute sustained chest pain and the reasons for delays in accessing care must be identified This baseline information should be used to establish targets for response times and for times to reach coronary care."*
>
> *(Building Healthier Hearts 1999 pp. 86)*

The research involves an across method triangulation approach which incorporates firstly a quantitative strand, followed then by a qualitative strand The quantitative strand involves the completion of a one year cardiac census of all Dublin Coronary Care Units, with the aim of establishing time delays to treatment for both men and women. I have enclosed a copy of the cardiac census form for your perusal. The form is quite straight forward, and the data shall be gathered from patients' notes, with no direct patient contact involved. It is hoped that the identification of any delays in treatment may then be investigated in a qualitative manner, with the ultimate aim of improving the quality of care to cardiac patients.

*I would therefore greatly appreciate your approval to include AMNCH in the Dublin Myocardial Infarction Census and subsequent qualitative interviews. Professor**** is fully supportive of this involvement and has agreed to act as my research supervisor for the period of study. The combined ethics committees of AMNCH and St. James's have given ethical clearance pending your approval and the approval of the Director of Nursing at St. James's. If you need any clarification regarding the research proposal, please do not hesitate to contact me.*

Thank you for your attention,

Yours sincerely,

.....
Sharon O' Donnell
Nurse Tutor

Appendix XII

Patient Summary

9 Newhall Court
Blessington Rd
Dublin 24

23.09.04

Dear Annie,

It was lovely speaking with you again on the phone, and I was delighted to hear that you're doing so well. As promised, I have included a summary of my entire study, and have condensed the results into just four pages. I would appreciate it very much if you could spare a few minutes of your time to read over this summary, and let me know your thoughts about it. You can ring me at the number below or write to be at the above address with your comments, which I'd love to receive. Additionally, if there is any way that I could have enhanced the research experience for you, I would also appreciate hearing your comments. If you would like any further information about the study results than please don't hesitate to ask me, as I would be happy to provide you with additional information as requested.

Once again, I would like to thank you for your unique contribution to my PhD thesis. I am certain that your participation in the study has enhanced our knowledge about women and heart disease, and as a result will improve the cardiac health care of many other Irish women.

Yours sincerely,

.....

Sharon O' Donnell
Ph: 01 4622060

Summary for Participants

The main cause of death for Irish women is heart disease, yet Irish women are more likely to fear death from breast cancer than a heart attack. Despite their high death rate from heart disease, there is little published information regarding the impact of heart disease on the lives of Irish women and so we tend to perceive this illness as a male phenomenon. However, both women and men can experience a heart attack and its life-threatening complications, yet early treatment of this condition can reduce these risks and lead to a full recovery.

Unfortunately, research that has been conducted abroad shows that women are less likely to see themselves as possible victims of heart disease and as a result delay in seeking help when their symptoms commence. In addition, nurses and doctors who care for patients with a heart attack also tend to perceive the illness as a male condition and so assessment and treatment for women may be delayed. This present study aimed to examine the pre-hospital pathway of care for Irish women and men who experience a heart attack, to establish whether Irish women also tended to delay in seeking help. In addition, the in-hospital pathway of care was also examined to ascertain whether assessment and treatment times were similar for women and men. Finally, the study explored in detail the pre-hospital actions of twelve women who had experienced a heart attack.

The study is divided into two parts. The first part of the study investigated the pre-hospital and in-hospital pathway to care for patients who were suffering

from a heart attack. A heart attack census which involved the six major teaching hospitals in Dublin gathered information from 890 patients during December 2001 to November 2002. The results of the census showed that Irish female patients suffering from a heart attack were more likely to delay in reaching hospital than male patients. In addition, the in-hospital medical assessment and treatment of female patients took longer than that associated with male patients. Female patients also waited longer for a bed in coronary care.

The second part of the study explored the reasons why female patients with a heart attack delayed reaching hospital. Twelve women were interviewed, and questioned about the action they took from the time their symptoms commenced to the time they reached hospital. One of the main findings from the interviews was the report by all participants of the occurrence of unexpected symptoms. Rather than experiencing the typical dramatic illness-onset with stabbing chest pain and collapse, most participants described a much slower onset of symptoms.

All twelve women recall feeling exhausted for a few days prior to their illness, whilst some complained of indigestion, shortness of breath and/or nausea. Most dismissed these symptoms as insignificant, and blamed them on other chronic conditions such as asthma, arthritis, heart-burn, bowel problems and angina. They tried to ignore the symptoms by continuing with their daily routine and didn't mention feeling unwell to others for fear of making a fuss. They tried lots of different treatments to resolve their symptoms such as

taking a warm bath, taking ant-acids or other medications, and having a cup of tea. Many of those interviewed perceived a heart attack to be a condition associated with men, and never thought that they would be a likely victim. Only when their symptoms became really bad, did they tell others about their experience. All twelve women told a family member or close friend first, before calling for a doctor or an ambulance.

The study findings show that Irish women do not see themselves as possible victims of a heart attack and because of this, they delay in seeking help. In addition, Irish women don't associate minor ailments such as exhaustion, nausea, breathlessness, dizziness with the typical dramatic image of a heart attack event. As such, they find it difficult to interpret their symptoms. As well as their delays in calling for help, Irish women experience delays when they reach hospital, as it would seem that Irish nurses and doctors take longer in their decision-making processes when it comes to women with heart attack symptoms. As the current treatment for heart attack patients is time-dependent, the pre-hospital and in-hospital delays experienced by women might limit their chances to survive this serious condition.

Recommendations emerging from the study include the launching of health awareness campaigns that highlight the risk of heart disease for women. These campaigns would outline the many ways that a heart attack might present, describing it as both as a slow gradual onset and one that is more dramatic. In addition, educational initiatives would direct both women and men towards the most appropriate action to take when faced with symptoms of a

heart attack. This would include taking an aspirin, early presentation to hospital for worrying unresolved symptoms and the utilisation of the ambulance service in the event of such symptoms. The study also recommends that the education of nurses and doctors must include the concept of gender-sensitivity in the care of patients with symptoms of a heart attack.

Appendix XIII

Schedule for Dissemination of Findings

Dissemination of Findings to Date

Presentations & Conferences

Date	Venue	Institution/Professional Group	Audience
Apr-03	Stockholm	European Society of Cardiovascular Nurses	Nurses
Jun-03	Dublin	Young Research Awards	Multidisciplinary
Jun-03	Dublin	St. James's Hospital	Multidisciplinary
Jun-03	Dublin	Adelaide & Meath Hospital	Multidisciplinary
Jul-03	Dublin	St. James's Hospital	Nurses
Aug-03	Dublin	Adelaide & Meath Hospital	Nurses
Aug-03	Vienna	European Society of Cardiology	Multidisciplinary
Sep-03	Dublin	St. James's Hospital	Nurses
Sep-03	Dublin	Beaumont Hospital	Multidisciplinary
Aug-03	Dublin	St. Vincents	Nurses
Sep-03	Dublin	St. Vincents	Multidisciplinary
Oct-03	Dublin	Irish Cardiac Nurses Association	Nurses
Oct-03	Dublin	Dublin City University	Nurses
Oct-03	Dublin	James Connolly Memorial Hospital	Multidisciplinary
Nov-03	Dublin	Mater Hospital	Multidisciplinary
Mar-04	Dublin	Irish Heart Foundation	Multidisciplinary
May-04	Dublin	Women's Health Council	Multidisciplinary
Oct-04	Derry	Irish Cardiac Society	Multidisciplinary
Nov-04	Dublin	Trinity College Dublin	Multidisciplinary

Publications

Date	Journal	Title	Review
Jul-04	European Journal Of Cardiovascular Nursing	Add women and stir - the biomedical approach to cardiac research	Peer Reviewed
In Press	Journal of Advanced Nursing	Pre-hospital care pathways: gender and myocardial infarction	Peer Reviewed
In Press	Journal of Advanced Nursing	In-hospital care pathways: gender and myocardial infarction	Peer Reviewed

Appendix XIV

Cardiac Rehab/CCU Letter

9 Newhall Court
Blessington Rd
Dublin 24

10.09.03

Dear,

Thank you for agreeing to meet with me to discuss the supportive role that the cardiac rehabilitation team/coronary care unit staff are willing to provide to research participants during the course of the qualitative aspect of my study. As agreed, I will inform you in writing when the interviews take place, and you shall visit each participant prior to their discharge. Once again, I would like to thank you for your on-going support for this study, it is very much appreciated.

Yours sincerely,

.....

Sharon O' Donnell

9 Newhall Court
Blessington Rd
Dublin 24

.....

Dear,

I have completed an interview on Date:..... with Name:.....who is presently a patient on Ward:..... She is due to be discharged on Date:..... and I would appreciate it if you could visit her prior to discharge. I would also be grateful if you could confirm to me when this meeting takes place.

Thank you for your support,

.....

Sharon O' Donnell

Appendix XV

Qualitative Patient Information and Consent Forms

Patient Information

Introduction: Myocardial Infarction (heart attack) remains the major cause of premature death in Irish society. Effective treatment for this condition is dependent on the individuals ability to seek help early. Of particular concern to the management of patients experiencing a heart attack are delays related to the pre-hospital environment.

Procedures: In order to identify these delays, your research nurse shall ask you questions related to your pre-hospital experience. A time shall be arranged, when the research nurse can visit with you, to discuss these things. She will ask you about the symptoms you experienced, where you were when you experienced them and who was with you at the time. She will also ask you questions about how you dealt with these symptoms, and the factors which influenced your decision to seek medical help. The entire conversation should take approximately 30 minutes.

One month later, your research nurse shall visit with you again, and will talk to you about your recovery experience since discharge from hospital. She will ask you questions about your physical well-being, and how you are generally coping at home. She will also ask you some questions about the support you are receiving at home from family and others. The entire conversation should take approximately 30 minutes.

Confidentiality: To assist with the collection of information, a tape recorder shall be used each time, however any information you provide to the research nurse will be dealt with in a confidential manner, and your participation will be anonymous.

Voluntary Participation: Participation in this study is voluntary, and you have the right to withdraw your details from this study at any time. The decision to withdraw from this study will in no way restrict or curtail your rights.

Benefits: Early medical treatment for patients experiencing a heart attack ensures optimum management of this condition. It is therefore essential to identify pre-hospital as well as in-hospital factors which may contribute to delays in care. Identification of such factors has realistic potential to inform not only nursing and medical practice, but may also highlight the need for increased public awareness in the treatment of heart attack symptoms. An examination of recovery experiences following a heart attack, will help to direct discharge planning from hospital as well as community support initiatives.

Risks: This is purely a data gathering research study, which shall not impinge on any aspect of your care whilst in hospital.

Permission: This study has the approval of the hospital Research Ethics Committee.

Further Information: Further information about the study may be obtained from Sharon O' Donnell, who can be contacted at 087 629 0563.

Patient Consent Form

Myocardial Infarction Care Pathways – are delays gender specific?

This study and this consent form have been explained to me. My research nurse has answered all my questions to my satisfaction. I believe I understand what will happen if I agree to be part of this study. I have read, or had read to me, this consent form. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction. I freely and voluntarily agree to be part of this research study, though without prejudice to my legal and ethical rights. I have received a copy of this agreement

PARTICIPANT'S NAME:.....

PARTICIPANT'S SIGNATURE: .....**Date:**.....

Date on which the participant was first furnished with this form:.....

Where the participant is incapable of comprehending the nature, significance and scope of the consent required, the form must be signed by a person competent to give consent to his or her participation in the research study (other than a person who applied to undertake or conduct the study). If the subject is a minor (under 18 years old) the signature of parent or guardian must be obtained:-

NAME OF CONSENTOR, PARENT or GUARDIAN:.....

SIGNATURE:.....

RELATION TO PARTICIPANT:.....

Where the participant is capable of comprehending the nature, significance and scope of the consent required, but is physically unable to sign written consent, signatures of two witnesses present when consent was given by the participant to a registered medical practitioner treating him or her for the illness.

NAME OF FIRST WITNESS:.....
SIGNATURE:.....

NAME OF SECOND WITNESS:.....
SIGNATURE:.....

Statement of investigator's responsibility: I have explained the nature, purpose, procedures, benefits, to this research study. I have offered to answer any questions and fully answered such questions. I believe that the participant understands my explanation and has freely given informed consent.

Research Nurse's signature:.....**Date:**.....
(Keep the original of this form in the participant's medical record, give one copy to the participant, and keep one copy in the investigator's records.

Further Information: Further information about the study may be obtained from Sharon O' Donnell, who can be contacted at 087 629 0563.

Appendix XVI

Transcriptions

Excerpt from Field Journal: Interview with Una 23.10.03

Una is a 57 year old woman who lives on her own in Dublin 8. She has no children but her brother lives nearby. She has no private health insurance and was referred to hospital by her GP. She arrived by car. Her symptoms started 3 days prior to admission but she attributed them all to the multiple chronic conditions that she experiences. She was triaged within 20 minutes and was seen by a medic within 25 minutes. She obtained a CCU bed in 3.5 hours. Her final diagnosis is transmural MI and she received a primary PTCA. This is her first MI.

I met Una in coronary care, 3 days following her MI. She was up and about and looked well. However, she also seemed a little restless and told me that she was feeling ready to go home. She was very interested in taking part in the study. After the tape was turned off, we spent another 20 minutes talking about women and heart disease, in particular, how we as a group, tend to ignore or dismiss symptoms. She believes that women are so busy with their work outside and inside the home, that they have little time to give to what they perceive as minor ailments. She thinks that life is harder for women then it used to be, because now many married women have two full-time jobs rather than just one. This increase in stress, workload and responsibility makes them more susceptible to heart attacks than they had previously been.

Transcript of Interview with Una (pseudo name) on 23rd October, 2003 @ 15.55

*Sharon: Sharon O'Donnell and Deirdre Dean talking. [Deirdre] could you just tell me ehm, what happened to you prior to coming into hospital this time? When it all started?

*Una: Well it started on Monday morning. I was walking up Thomas Street at about half eleven, a quarter to twelve

*Sharon: In the morning?

*Una: Yeah. And eh, I was heading up towards eh (laugh) the credit union, and suddenly I get this pain in the CENTRE of my chest. So I, I didn't think to much of it because I have (pause) a couple of different bowel problems and stomach problems and I thought, often I'd get a pain that goes right up my chest and onto my throat.

*Sharon: Okay.

*Una: That I thought coming up from the bowel and, so I headed on. Continued doing my shopping and eh, came back home, still very sore. So I took some Colofac which I take for bowel. And I took, eh, Camomile tea which usually relieves it a little bit

*Sharon: Yeah, yeah.

*Una: But it didn't really. It helped it very slightly. So then I thought well, maybe, you know, if I sit down and relax for an hour, I'll be grand. Which I did. And I had a cup of tea, another cup of Camomile and (pause) probably one of the worst things I could have taken, I took some cheese and an apple (Two of us laugh a lot here).

*Sharon: OKAY, I haven't heard that story before (laugh) Jeepers. Okay.

*Una: I thought, my answer to that (overlap) would be my, answer to everything (end overlap) is if you're able to eat you'll be alright (laugh). Providing you can eat, you can keep still going. (Lots more laughing here)

*Sharon: Now, you don't mind me saying to you, I do to.

*Una: So then I ehm, got changed and went off into town and decided I had some stuff ehm, I went into various shops and all I had to do was, coming back, CARRYING groceries, and pain in my chest getting progressively -

*Sharon: So it was still, all along? It hadn't gone?

*Una: (overlap) ver', it hadn't gone (end overlap). It just had eased very slightly. But it was there all along. And it THEN started going into my lungs and (pause) its getting worse. And I, at one stage, had to stop round about Dame Lane (pause) to try and get my breath and see would the pain ease down.

*Sharon: And had you your shopping bags with you?

*Una: I had two shopping bags. I dropped them down on the ground. Stood there while, various people gawked at me and (laugh) such like. And then eventually I moved on and I got home and when I-

*Sharon: Sorry, and when you say the pain got worse, what, where did you go, did you, was it?

*Una: It was centre chest and into the lungs.

*Sharon: So it kind of went deeper did it?

*Una: Went deeper. It just like as if somebody was , I better give you a description of it, it was like somebody sticking a poker into your chest.

*Sharon: Wow, okay.

*Una: That's what it feels. And, but your, my lungs got, felt like, closing, like your, you know like melodian, being squashed in. You know that kind of way?

*Sharon: And could you breath okay or (overlap) was that

*Una: (overlap) Well, my breathing (end overlap) was bad, but you see I have asthma, so I was putting it down to asthma, I was putting it down to EVERYthing. I never thought of it as being a heart attack. NEVER. And ehm,

*Sharon: So you picked up your bags.

*Una: Picked my bags a'-

*Sharon: Had the pain eased at that stage?

*Una: Very, very, very slightly. But I thought, well I HAVE to get home. I had no way of getting home other that walk, so I walked on. And I got in home and the sweat was POURING off me. But again, I put it down to something else 'cause I'm menopausal and I thought 'Oh, the old menopause at work again'. And I sat down then and I promptly fell asleep. So I slept for about fifteen minutes only. But it was kind of an EXHAUSTED type of sleep you know. And eh, when I woke up, the pain seemed to have eased VERY slightly. So I sat for another while and (pause) kind o', didn't do too much. Moved about a bit. Cleaning things up and that sort of thing, but nothing too mad. And ehm, then at about seven, I thought right I (laugh) got hungry. (Lots more laughing) I had some food. Ehm I suddenly felt AWFUL.REALLY awful. And I felt like I was going to die.

*Sharon: Now when you say 'awful'

*Una: The pain increased immensely.

*Sharon: Okay.

*Una: I was pouring sweat and I felt like I couldn't breath. (pause) So, my usual answer, I'll go for a Colofac and losec, the losec for my stomach and the Colofac for my bowel. Because I was CONVINCED it was this (overlap) wind pain, as they call it, from the bowels and eh, so it EASED eventually and this is it, enough to kind of let me kind of, lie down on the couch and relax. Now, I didn't sleep, I just lay there. The pain was bothering me and I couldn't lie on the left side at all because the pain was coming down my ARM. But I have bad arthritis and I get pains in both arms.

*Sharon: Okay.

*Una: So I was putting it down to arthritis (pause). Putting it down to anything else. And (pause) eh, eventually I went in the bed and, didn't sleep very well, but I DON'T sleep well ANYway. I've a BAD sleep pattern. Got up the next morning. Still feeling pretty grotty.

*Sharon: And was the pain still there?

*Una: Still there. It never had gone away. Wasn't quite as severe as it had been but, hadn't gone away. And ehm (pause) I was kind of just (pause) washing up things and, and kind of putting washing in the machine and that sort of thing and, not feeling too hot. Kind of having to put on, I couldn't bear the thought of a bra going around me 'cause I was feeling so tight around my chest and lungs. And, so I was running around in a t-shirt (laugh) and a pair of (pause) kind of

*Sharon: Tracksuit bottoms.

*Una: tracksuit bottoms. And ehm, as the day progressed, it wasn't improving so, true to form, my way of getting rid of ANY pain is to work it out of me. So I decided to clear out my wardrobes.

*Sharon: (laugh)

*Una: (laugh)

*Sharon: OKAY. And the pain was still there.

*Una: The pain was getting worse, yeah (Laughing). And I kept saying it'll go away now in a minute, it'll go away now in a minute. And, this thing isn't going to beat me. This is my reaction to pain. 'Cause I've had a lot of pain over the last number of years. I've been on sick for about twelve years. I've lots of arthritis and eh, ulcers and (overlap) oh.

*Sharon: (overlap) so (end overlap) you're used to having (overlap) pain and

*Una: (overlap) So I'm used (end overlap) to having A LOT of pain. And I'm used to kind of working through its. So, I thought this was just working through the (laugh) pain aswell. But then, it came to about seven and I said right, don't feel QUITE so bad, I AGAIN had something to eat. So I had (pause) what did I have? Something reasonably light. But as soon as I ate it, I felt VERY sick. And I really felt like I was going to GET sick. And I came out, and I really kind of sweats all over me. And for the first time in my life I lost my colouring. I usually don't lose my colouring no matter how ill I am. And ehm, then at about a quarter to nine, ehm, the phone went and it was a friend of mine, female friend and she said ehm, 'Hi'y doin' tonight? 'Oh not great, I'm not feeling the best', and she said 'What's wrong?', so I told her that I had pain across my chest and I was like, oh an' down my left arm. At this stage, my left arm was sore. I cou', actually couldn't touch it like that. It was unbearable to touch.

*Sharon: Yeah.

*Una: And I said, w' CLUTCHING my chest (laugh) and not knowing what. I NEVER, it still NEVER DAWNED on me, that it was a heart attack.

*Sharon: Okay.

*Una: NEVER crossed my mind. Even though there's a history in my family.

*Sharon: yeah.

*Una: I don't know why. It still didn't dawn on me. Probably being, even though I'm not very young, but being youngest in my family, that could happen (laugh) to all them before it'd happen to me.

*Sharon: (laugh) Yeah, yeah.

*Una: So, anyway. Eh, she said 'Call the doctor' and I said 'I'm not calling the doctor'. And she said 'Well I'll call the doctor'. And I said 'You will NOT call my doctor'. After SOME argument I agreed that I

would ring the doctor in half an hour if the pain didn't subside. And she said 'Well, why don't you ring him now?' and I said 'No, I'll wait another half hour', which I did. And the pain DIDN'T go, it got worse and worse. And I, then I got SLIGHTLY sick then and I'm near the bad stage of it. It was not what I had thought it was. But I wasn', STILL hadn't thought it was a heart attack.

*Sharon: Right, okay.

*Una: Rang the doctor and it was through the agency. They put you through to one then to another and then they said well, describe your pain. So I described the pain and they said 'Well, the doctor WON'T come out to that and especially when there's a history in the family, go straight to the hospital. Call an ambulance and that'll get you there. Maybe you've family or friend's will bring you in.

*Sharon: Uh huh.

*Una: So I rang my brother who lives about ten minutes away and he was over. And I said to (Kevin) all the way (laugh) up to James's, 'It's really only wind I've got'. (laugh)'I think we should turn back'. (Lots more laughing)

*Sharon: Oh, go'.

*Una: I mean, talk about being determined not (laugh) to have something (More laughing)

*Sharon: Yeah.

*Una: And he said 'Well, whether its wind or not, we are going. I am NOT turning back now, you need to be seen'.

*Sharon: mm hmm

*Una: And, so, I came in and, registered the A + E and I, she said, you'll be seen in about ten minutes. So, within about ten minutes I WAS seen. And ehm, another, I think it was a young nurse? I'm not quite sure, ah maybe it was a young doctor, saw me. And she took my blood pressure and kept telling me to relax and I kept saying 'I AM relaxed (laugh)'.

*Sharon: (laugh)

*Una: There was the bed (laugh) shaking all over, you know.

*Sharon: Yeah, yeah.

*Una: Thinking I was very relaxed of course. And eh, then, eh, a few minutes later she said 'Come out with me' and called another young doctor, I think it was at this stage, and there was a lot of rushing around, people being routed out tr, ehm, trolleys out to the hall and trolley rushed into the space and me put on the trolley, and handed Aspirin immediately. Soluble Aspirin. And eh, given oxygen, and ehm, but then it was like, a few minutes, I had been linked up to all sorts of stuff.

*Sharon: Yeah, yeah.

*Una: And ehm, (pause) one, two young doctors saw me first when I came in and then another (pause) I think another three young aides were there? And eventually this registrar I think he was, called Brian or something or other, arrived.

*Sharon: So, you had lots of people (overlap) fussing around you.

*Una: (overlap) so there were (end overlap) yeah, there were, for a LONG time. And they gave me a spray under my tongue. They give me that actually, first and then they gave me the Aspirin. And that seemed to ease very slightly. And then (sigh) ehm, they laid me back, it got worse.

*Sharon: Oh right.

*Una: So I needed to be kind of up, because every time I'm back I felt like I was smothering. And ehm (pause) So then ehm, after about (pause) I suppose and hour, of giving me VARIous different tablets. Now, I'm not quite sure, I know asprin certainly was one of them then there was, I think it was a beta blocker but Im not sure.

*Sharon: Okay.

*Una: I'd to then put on three different drips aswell. Ehm (pause) and heparin? (pause) Well, something or other. I'm not quite sure of names. And ehm, then the young doctor rang up here and said he needed a bed straight away.

*Sharon: And had your pain gone (overlap) at that stage, no?

*Una: (overlap) No. The pain (end overlap) was still there. It w', it EASED very slightly but was still very much there. And was gone into the lungs quite a lot. And ehm, then ehm (long pause) shortly after that I was given a chest x-ray? Doctor wasn't happy enough with the results of that so he called for CT scan?

*Sharon: mm hmm

*Una: And at about one o'clock in the morning then I was taken down for that. And ehm, that was kind of a peculiar feeling 'cause the place everywhere was quiet and there was a deathly silence around the place. And these two men had come in from home to give the thing so. But they were all very nice and everybody was essentially just (pause) as GOOD as they COULD be, you know? And ehm, then I was injected with some stuff or other. I can't remember what it was. They CHECKED was I asthmatic person. I said I was and then they said ehm, 'well, we'll give you this other one', and I had to put my hands behind my head (pause) or kind of above my head.

*Sharon: Yeah

*Una: (laugh) and I started to tremble and they couldn't get this done. And I was trembling and trembling and nobody could get it to stop, it was a, I was having (laugh) a fit but I wasn't actually, you know. But apparently it was just a reaction.

*Sharon: Yeah

*Una: Ehm, I have a lot of reactions, BAD reactions to drugs.

*Sharon: Okay.

*Una: I'm, and I can't take antibiotics of any description so. So, after a few minutes then ehm, one of them just stood and held my hand and eventually, the shaking stopped. And ehm, then they gave me some, I don't know WHAT the injection was. And they did various tests and, then I was brought back to ehm, Resus again. And eventually, I think about half two? I was brought up here. And then ehm, the registrar did ehm, (pause) an echo in my tummy. And he also took me, at THAT stage he put me on my, the third drip which was the Repro something or other. He gave me other tablets anyway.

*Sharon: But the pain disappeared eventually.

*Una: The pain, no, the pain DIDN'T go away at ALL. It was still there. There yesterday morning aswell. Not as bad, but still there. And then I was taken down yesterday (pause) for an angiogram and they looked at the angiogram and eh, it was the young registrar who'd been on the night before again and, ehm, we were kind of (laugh) joking about him still being on duty at this stage. But ehm, then, I think it was Dr. Keane, he came along and he said ehm, I think we need an angioplasty and we'll do it straight away. So, they did an angioplasty, and suddenly my pain went.

*Sharon: Right.

*Una: And that was the first time I had relief for about two and a half days. So that's essentially it.

*Sharon: Wow, that's a story.

*Una: (laugh)

*Sharon: Okay, can I take you back to when it all started on the Monday?

*Una: Yeah, yeah.

*Sharon: Now you were saying that the, you know, the pain in your chest, why didn't you think it was a heart attack? I know you're kind of putting it down to your bowel and your stomach and the menopause and your arthritis. Why didn't a heart attack come into your head?

*Una: W', 'cause I'd never had high blood pressure. I have, oedema but its coming from an underactive thyroid?

*Sharon: Okay.

*Una: And, I've never shown any kind of form of problems with my blood pressure, so I, always kind of relate it to high blood pressure. And I don't smoke, I never smoked. I would have a drink but I, I'm not a real HEAVY drinker. Like, maybe, like on a Sunday when we would all go out to dinner or something like that. (pause) And I, I, it just never DAWNED on me. It was something that, I dunno, I suppose maybe I should have thought about it, but I just DIDN'T THINK of it.

*Sharon: And would you have any family that have (ovelap) had heart attacks?

*Una: (overlap) Yeah. (end ovelap) My father DIED of a heart attack. And he had his first heart attack at fifty nine. And immediately, the day after that he had a block of the heart and he was given an hour to live, and then he recovered. And he did for eleven years after that, but he had had a number of small strokes in between. And then he died just the day after his seventeth birthday. And my brother who lives on his own in the North, he had ehm, I think he started having angina when he was about thirty five.

*Sharon: Okay.

*Una: And he had his first Coronary, I think when he was about forty eight. And then he had a second one and (pause) then he had a quadruple bypass. And, he has unstable angina, he has diabetes and he has asthma. And on my fathers side, all of our relations died of heart attacks. Every single one. Including a young cousin of twenty three. Eh -

*Sharon: And would you have thought it was more a disease that would affect males, does that ever come into your head that it was kind of something the men would get, but the (overlap) women

*Una: (overlap) well, partly (end overlap) partly. Yeah, I just never thought, 'cause part of me, because I knew ehm, any ehm, slight ehm, murmer and my mother had had a murmer all her life and lived to eighty five years of age. And I'd sort of think, I'm very like her in that [space] of [we s'] like illness. And she had ALL the illness's that I have. She had most of them with the exception of the ulcers and the bowel.

*Sharon: (laugh)

*Una: Well I jus' keep 'n sayin' 'Oh, Im just like Winnie', you know I think, I'm NOT like my father you know. I'm not taking after the NAME side of the family you know? But unfortunately, it seems like I am, you know?

*Sharon: And what would you have classed, like, if you were to describe a heart attack to someone, how would you have thought a heart attack would present?

*Una: Well, very similarly to the way it did actually.

*Sharon: Mm hmm.

*Una: The, you see, the thing that actually, I suppose, put me off very, very much was, I have, as I say, diverticulitis and irritable bowel, and you get this very strong wind in your stomach which starts kind of low down, comes up and goes in under your breast. And its like somebody stabbing you. That's really what it feels like. And it goes back into the LUNG, aswell. And sometimes it can ride up to the chest and then into the throat.

*Sharon: Okay.

*Una: So it felt, initially it felt very similar to that. The thing that was different about it was that the pain was right in the centre of my chest (pause) and, when it went down the arm, I couldn't hold my arm, which I could have normally have done. It was just too painful to touch. And it was then I suddenly realised.

*Sharon: It was different.

*Una: It was VERY different.

*Sharon: Okay.

*Una: And I think somewhere, dur -

*Sharon: And when you realised that, why didn't you call a doctor at that stage?

*Una: Well I, I, I suppose, (pause) bloody mindedness (laugh) Yep. Something like that. This is never going to get the better of me. Ehm, I can, handle anything attitude. And ehm, and also, you know, just not willing to believe that I could be having a heart attack. I think there was a lot of that somehow.

*Sharon: Yeah. Okay, you were denying it a (overlap) little bit, yeah.

*Una: (overlap) Denying it (end overlap) ehm,maybe. And, but eh, I mean I sort of was very convinced right up until teatime on Tuesday that, you know, I could deal with this. And for w', a split second after I had spoken to my friend, she'd been giving me all these lectures about going getting a doctor immediately, I thought, auck, a, no bother. And then I thought, I can't deal with this in bed tonight. In the middle of the night, this gets worse, I won't be able to deal with it.

*Sharon: Explain that a bit more to me, why could you not deal with….

*Una: Well I knew it was not getting better and, well ehm, I live alone and during the night things seem worse especially when you're not well….I know that from experience

*Sharon: From your previous experiences with illness

*Una: Yeah, its important to get it sorted in the daytime…more people around that can help or that you can call…the nights very long when you're not well!

*Sharon: Is it more frightening?

*Una: Yeah it is. And that was REALLY with me to think about changing my mind. And then when I rang the doctor and they sounded QUITE worried and eh, were very emphatic that I should go to the hospital. I thought right, this is not the time to start messing about. And that was when I phoned my brother.

*Sharon: And come here, why didn't you phone and ambulance. Because that was the other option you had.

*Una: Yeah, I thought now, (pause) I could phone an ambulance and I could be waiting ten, fifteen minutes. Then there's all the hassle, our gates are locked in the apartment block. The gates are locked. You have to give them codes. I was going to have to EXPLAIN all that to them, on an emergency number. And I just thought, oh (whisper) God, I can't be handling this. Ring Seamus, he knows all about it, he'll call. I also felt I wanted support.

*Sharon: Right.

*Una: Some family support. I know that might seem odd

*Sharon: No it doesn't.

*Una: But to me there was this need to have somebody there

*Sharon: that knew you.

*Una: that knew me, and knew, (laugh) what kind of person I was and why I was reacting so (overlap) much, you know. And I thought, 'now, he'll know', and of course he did. He, his reaction would have been the same as mine, oh, laughing it off, you know, pretending to yourself its not REALLY happening. That its ALL in your mind. And ehm, our family are INCLINED to do that to some extent. Sort of DENY the illness is as bad as it is.

*Sharon: When did you REALISE, when was the moment you realised, this is a heart attack?

*Una: When I was talking to my friend, Breda, I (pause) went to say something to her and I suddenly felt weak all over and the pain in my chest, it was just like somebody sticking something RIGHT down, piercing your heart literally. And, the sweat started to POUR down my face. And I felt like I was going to be violently sick. I went in the bathroom and got very slightly sick, but just very slightly.

*Sharon: And what was going through your head there, emotionally? Were you afraid, ehm, were you trying to brush it off?

*Una: Yeah, eh, I was VERY nervous (laugh). In the middle of it all I decided to wash me toilet just in case I go (laugh)

*Sharon: (laugh)

*Una: (laugh) I'm totally mad, to do it (laugh)

*Sharon: (laugh) Isn't it incredibly mad, the things we can, THINGS we do. I know

*Una: I thought that if, , I can't let anybody walk into this house, and the dinner dishes (laugh)

*Sharon: (laugh) Ah, that's (overlap) very funny.

*Una: (laugh) So I washed the dinner dishes, WASHed me teeth, and (laugh) RANG me brother

*Sharon: (laugh)

*Una: (laugh) and I was ready to go then (laugh).

*Sharon: (laugh) Its gas. Very funny. And come here, the other thing I was going to ask you was, you know when you got to Casualty and you were saying they saw you within ten minutes, did you expect it to be that quickly?

*Una: No.

*Sharon: Were you impressed with it or?

*Una: I was VERY impressed because they were, I don't know, there's at least twenty, thirty people ahead of us. And when I went to the girl at reception, eh, I said, gave her my name, address. And she said have you been here before and I said yes. And she called me back then, it was the computer. And she said, what are your symptoms and I said, pain in my chest and into my lungs and down my arm She said, the nurse will see you in about ten minutes. And it was LITERALLY within ten minutes. (pause) Well, I was, think it was ten minutes.

*Sharon: Alright.

*Una: The nurse called and I was inside. And it all seemed to happen very quickly and they were all VERY efficient. I would NOT have any complaints about ANY ONE of them. They were all extremely efficient

*Sharon: That was in contrast to what you would have perceived, would it?

*Una: Yes I mean, I've heard so many HORROR stories that's, people, I meant to say, there were people lying in the corridors, 'cause they've nowhere to put them. But we WERE being dealt with.

*Sharon: Yeah.

*Una: They WEREN'T being ignored, they had been treated to some extent. And then, where they couldn't treat them any more, or were waiting for Resus or whatever (pause) its my, they ehm, in the end they had left, ehm, there was, ELDERLY man, he was in the room where I was put, I don't know what had happened to him. But he didn't seem to be QUITE, could have been a stroke, I really don't know. But his family were all around him and they, it was explained to them what was happening

*Sharon: Right.

*Una: And meanwhile, I was standing in the corridor because there was nowhere else for me to go.

*Sharon: Okay.

*Una: And, one of the nurses there, I don't know whether she was a nurse or a doctor, she was in a green outfit anyway, kept saying DON'T MOVE, I don't want you to move. And when I kind of looked, I must have looked scared, she says I, we think you're having a heart attack. I don't want to do that, I DON'T want to frighten you, you know, but you NEED to know. Which is fair enough (laugh)

*Sharon: Which confirmed what you, your (overlap) thinking.

*Una: (overlap) Yeah, because (end overlap) then I, yeah. All the things that I had said, you know, and eh, half way up I was saying to Seamus, turn back. You know, 'cause it'd eased down. And he said then 'No, no, we're going on'. And of course, once it happened (pause) and then I said (sigh) you know, to the (sigh) doctor, well, my brothers outside. Will someone let him know? He said, we've already let him know. So they were VERY efficient in EVERY WAY. In EVERY way. An' I, I must say, I could not fault them about ANYTHING. And the same since I've come in here, they're extremely efficient and VERY, KIND.VERY kind. You know.

*Sharon: There was another thing I was going to ask you about, ehm, heart disease generally Do you think that men are more likely to get heart attacks than women, or do you think its even stephens?

*Una: Well I think generally, I'd normally have said men, because it USED to be. Its not quite the same thing now but it USED to be that more men, smoked and more men DRANK than women. But nowadays its ALMOST even stephen. Because women are smoking a lot earlier AND they're drinking a lot earlier.

*Sharon: mm hm

*Una: And ehm, often people put it down to the fact that you're a smoker. I never smoked in my LIFE. Now I would have been in the company of SMOKERS, but I never smoked. And, maybe that has something to do with it, I really don't know I had a relationship with a guy for many many years who was a very heavy smoker. My father was a heavy smoker, my brother who is very ill, is a heavy smoker.

*Sharon: Yeah, yeah.

*Una: Ehm (pause) But, you know, I just put it down to emm, more of THOSE two factors than eh th'.

Its only in more RECENT times that people have been saying 'Oh, well its very much to do with your genes'. And I think now, I would be inclined to think of THAT first, family history. And the others to come second, third down the line.

*Sharon: Yeah, family history is extremely important.

*Una: Yes And I think e', for VERY many years, people HAVEn't thought of it. That family history is VERY VERY important. I think its only in recent times that its become more OBVious.

*Sharon: Yeah.

*Una: Ehm, but I mean, all these other things do (pause) go against you. I used to be a very small seven stone (pause) woman. Then, between (laugh) then when we get older and my under active thyroid and, and not working because I was ill. I, now I do walk a lot, but I'm a lot less active other than walking than I ever was in my life. And I gain weight very easily. But also, when you're sitting about at home and you haven't things to occupy your mind, you eat more.

*Sharon: yeah.

*Una: And it DOES, its like a vicious circle you know?

*Sharon: Okay.

*Una: And you THINK you're not eating a lot until you start COUNTING what you've eaten.

*Sharon: And would you know any other women who have had heart attacks?

*Una: I've kno', I know one who died immediately she had it. She was a ve'. Now, she was seventy three, but she was as healthy as anything as they say. Or appeared to be. And ehm,

*Sharon: Do you know anybody else who has survived?

*Una: A heart attack? No. Nothing there. Ehm (pause) I eh, have a sister in law who had a very severe stroke and survived that recently. She's just sixty years of age. Mother of eight. But, not QUITE the same thing.

*Sharon: Yeah.

*Una: I really don't know, anyone I've known who, any WOMAN I've know who's had a heart attack has died of it.

Sharon: Right. Okay. Well listen, (Deirdre) that's all the questions I need to ask you

Una: Good

Sharon: That was fantastic. Listen, thanks so much.

Una: (laugh) Probably very weird. (laugh)

Sharon: It wasn't at all. I'm just, completing the interview at 16.45.

Excerpt from Reflective Diary: Interview with Una on 23.10.03

This was probably the most enjoyable interview. Una was a great story-teller, and in addition she was extremely funny – the two of us spent a lot of time laughing! She was actually laughing at herself a lot, realising in hindsight that the things she had done were 'daft', as she told me later! She also seemed to have great insight into how her own behaviour and personality traits might have impeded her ability to seek early treatment. She appeared to me as a very strong independent woman, who wanted to sort out everything herself and didn't want to give in to her illness. I think the reason I enjoyed this interview so much was that I could identify with some of the things she had done or said. She was also the youngest woman that I interviewed and I really enjoyed the rapport. However, I wish I had spent more time during the interview exploring the fact that she lived alone - this fact probably contributed to her strong desire to work through her experience by herself, and when it didn't resolve I wonder if living alone had made the experience more frightening.

Excerpt from Field Journal: Interview with Cathrina on 23.10.03

Cathrina is a 58 year old woman who lives in D15. She has private health insurance and was self referred. She is married and lives with her husband - her husband drove her into hospital. She presents into hospital after a couple of days of symptom onset and is seen with 35 minutes by the triage. She sees the medic in 2.75hours. She receives a CCU bed in 17 hours. Her diagnosis is transmural MI but she is too late for thrombolysis. Cathrina is a very independent lady who runs who own hairdressing salon, and is heavily involved in looking after her 90 year old mum who lives some distance away. I met Cathrina in Coronary Care 4 days following her heart attack. She looked well and was very chatty. Both Una and Cathrina were patients on the same unit, and they appeared to hit it off. They were joking with each other when I was taking them in for their interviews. I think they were both a little bored and ready to go home.

Transcript of Interview with Cathrina (Pseudo Name) on 23rd October, 2003 @ 15.15

*Sharon: Rena, can you just tell me what happened to you prior to coming in to this admission, when did your symptoms start, all that sort of thing.

*Cathrina: Yeah, ehm, I suppose it started, I was admitted at 8 o'clock on Monday evening, but I got my pain, or my sensation

*Cathrina: at 6 o'clock in the evening.

*Cathrina: and I was advised by a district nurse who happens to be my cousin, ehm, to have it checked out.

*Sharon: And was that the first time you had that or did you have it before that?

*Cathrina: No, no no, I had it last, the week before aswell when I was on holidays.

*Sharon: Okay, describe that to me in full.

*Cathrina: Ehm, when I was in Spain, I got into the pool and it was a hot day, but the pool was cold.

*Cathrina: So somebody told (overlap) me

*Sharon: (overlap) Sounds lovely (laugh) (end overlap)

*Cathina: that when I got out of the pool, that ehm, it may have triggered off the sensation that I had.

*Sharon: Okay. And what was that sensation?

*Cathrina: That sensation was (pause) a very very slight achey pain, but is was more the weakening feeling that I was getting with it (overlap) that made me

*Sharon: (overlap) okay (end overlap)

*Cathrina: sit down. That was it. Now I wouldn't have thought it was serious. I just passed it off that it was ehm, maybe the stint I had put in with the cold water, the hot, bathing in the cold water would have made a difference, but it didn't. Obviously it was the start of something.

*Sharon: And did that, did that feeling, or that sensation, last long?

*Cathrina: Oh, only seconds.

*Cathrina: Only seconds, but afterwards you would feel like putting on a cup of tea in order to get your real strength back .

*Sharon: Okay. And did you do that?

*Cathrina: I did.

*Sharon: Oh alright. So that was the first time it happened. And did it happen again after that?

*Cathrina: Yes, it happened Saturday evening.

*Cathrina: When I'd come home from work ehm, on Saturday evening, the same story, this time I was feeling more tired.

*Cathrina: But thought maybe you know, after been working all day

*Cathrina: it could have had that effect on me. But I went up and I lay on the bed and just as I laid down on the bed, I got the very same feeling.

*Cathrina: That sort of, weaky feeling. Got a drink of water and ehm, I was up again.

*Sharon: And would you have thought it was serious at all at that stage?

*Cathrina: Yes, I was starting to worry about it then and I -

*Sharon: Why?

*Cathrina: I was starting to worry about it because it was the same type of feeling,

*Cathrina: so therefore it wasn't to do with the water.

*Cathrina: In my books it wasn't. Ehm, it was me.

*Cathrina: And there was something not right happening. And I had promised myself on that Saturday evening that I would go to the Doctor on the Tuesday.

*Cathrina: That was my intention. Because I was going down to collect my mother in Carrick-on-Shannon

*Cathrina: who was there with my brother, and we came back by her house.

*Cathrina: She wanted to collect some clothes and Marie, the district (overlap) nurse was there

*Sharon: (overlap) That was on a Tuesday. (end overlap). Why didn't you go on the Monday? Why wouldn't you go?

*Cathrina: Because I was too far away from my own doctor.

*Cathrina: You see, my doctor in Esker Lawns. She's actually in the estate where I live.

*Cathrina: So I wanted to go back to her (overlap) or else

*Cathrina: come straight in here.

*Sharon: Alright, so on the Saturday you'd been, go back to Saturday, what did you do then after when you (overlap) lay down.

*Cathrina: (overlap) I stayed in bed (end overlap)

*Sharon: Did you?

*Cathrina: And I hoped and prayed that I would get a good nights sleep and I never woke until the next morning.

*Sharon: Alright, and what was going through your head, did you think you were in danger, or did you think you were going to be okay?

*Cathrina: Well, yes, it was, it was such a short period of time, like, on either time it wasn't a long period of, if it was getting longer I would say (overlap) oh here,

*Sharon: (overlap) uhmm (end overlap)

*Cathrina: I'd better do something about this.

*Cathrina: But because it was all over and done with so quickly

*Cathrina: that, and the same applied to Monday.

*Cathrina: and I was sitting on a, on my mothers couch, and you know, obviously my face changed.

*Cathrina: because Marie said to me you know, 'Are you alright?'. And I said, ' I'm getting this thing (pause) I, I've had it a few times', and she said 'you've had it a FEW times?, you'd best have that checked out'.

*Sharon: And the Saturday again, did you tell anybody it was Saturday that you had it?

*Cathrina: I told a friend of mine who actually rang me.

*Cathrina: My husband was in the other room because he had flu, so I didn't want to go near him because I was afraid I'd get flu.

*Sharon: (laugh) oh, right.

*Cathrina: You know.

*Sharon: So you didn't tell him that you're

*Cathrina: No, I didn't tell him at all.

*Cathrina: I didn't say 'cause he was coughing away and he was, you know, I could get a really bad cold and he says 'don't come near me because I don't want to give it to you'.

*Cathrina: You know. So that's how he didn't really know.

*Cathrina: And, but he knew on Monday then.

*Sharon: Okay, so you told a friend on Saturday.

*Cathrina: I told a friend but she know by my voice, so obviously it had had an effect on my voice.

*Cathrina: It was a duller voice. So it must have had.

*Cathrina: Actu, she said to me over the phone, 'are you alright?' and I said ' ah' I said, 'I got an auld fluttery thing here in my chest'. She said 'do you want me to come over and pick you up and I'll bring you into the hospital?' and I said 'ah no, no, I will go on Tuesday'.

*Sharon: What made you not go on Saturday?

*Cathrina: (sigh) I don't know why. I should have (pause) you know really and truly, I should have. I think it was when Marie, who was here, in the business like yourself, that she in, said 'don't let tonight go without worry'. I think that brought it home to me then.

*Sharon: Okay, and that was on the Monday.

*Cathrina: That was on Monday.

*Sharon: Tell me all about Monday, what happened on the Monday?

*Cathrina: Yeah, well Monday then was eh, I drove from Longford up to Lucan and before, on my way, I asked my husband was he in work or was he out of work. And he said 'no, I went in this morning so, I'm here at home'. And I told him on the phone, I said 'Dermot, I've got this funny feeling again'

*Cathrina: and I said 'I'm in……, but anyway I'm going in, would you bring me into the hospital?'

*Cathrina: So he says 'I told you before'.

*Sharon: So what happened, you were with your Mum on the Monday?

*Cathrina: On the Monday.

*Sharon: And there was a health visitor there aswell?

*Cathrina: The health, she's a district nurse. And the reason why she was called over to her was to sort out all her tablets.

*Sharon: Oh, alright

*Cathrina: She's on a lot of tablets

*Cathrina: because my Mum had a heart attack.

*Cathrina: even though she's 90 years of age, I mean

*Cathrina: was driving up to July.

*Sharon: Oh my goodness.

*Cathrina: Driving, yeah, that's a wonder. This is where I think a lot of my stress came in too.

*Cathrina: I think I was very stressed over my Mum.

*Cathrina: She was in Mullingar Hospital and I drove up and down twice a day and

*Sharon: oh my goodness

*Cathrina: did have shingles out of it which was stressed related I was told by my doctor. And my doctor checked me that time.

*Cathrina: and said, 'well your heart is okay anyway'.

*Cathrina: You know. So it wasn't, I didn't think it was worrying, but

*Cathrina: now I do know.

*Sharon: And on the Monday, you felt unwell again when you were with -

*Cathrina: No, I didn't feel tired on Monday at all.

*Cathrina: Isn't that amazing.

*Sharon: Yeah.

*Cathrina: I didn't have that tiredness I had on the S, Saturday night. I did not. I didn't, I was quite normal, quite, you know, myself. I drove from Carrick-on-Shannon to Longford and eh, just sorted out a few things for my Mum, but, we were just about to have a cup of tea when (pause) this thing just (whisper) wow, (normal voice) came over me.

*Sharon: And what was it like that time?

*Cathrina: It's ehm, just this (pause), achey type of a feeling, was always on this side.

*Sharon: Yeah, right hand side, yeah

*Cathrina: And funny, it was that side when I took my spasm down the stairs aswells. And this side here was jumping like, that was when I took the (pause) attack down the stairs.

*Cathrina: But this, w, it was always kindof on that side, it was a certain weight I suppose.

*Cathrina: But an ache. And then it was like as if it released something, and it just like that, disappeared.

*Sharon: Okay. You had a relief following that.

*Cathrina: Thoroughly.

*Sharon: Did you think in your head it was a heart attack.

*Cathrina: No.

*Sharon: Why? What did you think a heart attack (overlap) would be like?

*Cathrina: Because my, eh the, I though it was, I thought it could be related, but I didn't think it was a heart attack because, the, my experience of a heart attack was very very painful. Excrutiating, it was. You know, I actually would scream with it.

*Cathrina: It was that bad.

*Sharon: And this is different.

*Cathrina: This was nothing in comparison.

*Cathrina: Really nothing. It was just that (pause) but then as I've been saying, I have, I suffer with ehm flushes from menopause.

*Cathrina: and I would get that kind of h, but, I wouldn't get anything here,

*Cathrina: but you know the way you'd get that warm, well, you wouldn't (laugh) but

*Sharon: (laugh)

*Cathrina: (laugh) you'd get this (laugh) terrible warm feeling. Cause I was on HRT and they took me off it.

*Cathrina: Which is understandable.

*Sharon: Yeah, absolutely.

*Cathrina: But ehm, I would get this warm feeling and it would go away the same way.

*Cathrina: You know.

*Sharon: Do you think it was related (overlap).

*Cathrina: No, well I. They thought that was [it] when I came in, that it could be menopausal.
*Cathrina: You know, when they started testing me and took blood and (sigh) discovered that there wasn't really anything coming up.

*Cathrina: that this was before the real -

*Sharon: real episode.

*Cathrina:Yeah.

*Sharon: So you were sitting there on the couch and the district nurse looked at you while you're having (interupt)

*Cathrina: That's, she said to me roll up your sleeve there and I'll take your blood pressure.

*Sharon: uh hmm.

*Cathrina: So, and she said to my brother, 'I don't think her face have gone back pale, has it?'. Tom said 'Ah, not really'. But I had changed a little bit.

*Sharon: Yeah, yeah.

*Cathrina: No I had changed. Definitely.

*Sharon: So what happened after that?

*Cathrina: So that was it. She rolled up my sleeve and took the blood pressure and that was 150 over 80. Now she said its not dangerous.

*Cathrina: but, its high for the way your blood pressure has been.

*Cathrina: And then when I came into the hospital, it went higher again.

*Sharon: And how did you get into the hospital. Did she suggest you to go in or.. ?

*Cathrina: Ah she did, she definitely suggested. She said 'if it was me (Rena) I would go straight to the hospital. Don't even think of your G.P. Just go straight in', because as I had told her before,

*Cathrina: that Professor Walsh did say to me 'if you EVER feel any BIT unwell…'

*Cathrina: 'because we don't want you to be stressed, relating to your heart' he said, 'come straight in, we'll check you out, and if that does be all so be it'. But in this case, I was brought straight in.

*Sharon: And how did you come in to hospital?

*Cathrina: Denis my husband brought me in (overlap) by car.

*Sharon: (overlap) and you didn't come in by ambulance (end overlap).

*Cathrina: No.

*Sharon: Why not?

*Cathrina: Because it was, at this stage, I didn't think it was serious enough (pause)

*Sharon: Okay

*Cathrina: to get the ambulance. Besides the point, my Mam was up with me. She came up to my house.

*Cathrina: And I didn't want to alarm her. Like I had just said, well, 'I'll go in, just to have a check up' (overlap) 'I'll probably be home later on.

*Sharon: (overlap) Oh right, okay (end overlap). To be arriving up an ambulance with blue lights (interupt)

*Cathrina: Oh my God, give her another (laugh) heart attack. It really would. So ehm, that's why, I didn't want to, to worry her either. But I didn't think it was an ambulance job.

*Sharon: Okay, (overlap)what would

*Cathrina: (overlap) When I (end overlap)

*Sharon: what would you have thought was an ambulance job?

*Cathrina: Dreadful pain.

*Cathrina: Now I ehm, yeah, dreadful pain I would say, uhmm eh, a lot of discomfort I would say would be a hospital

*Cathrina: (correcting herself) or an ambulance job, yeah.

*Sharon: Can I ask you just in relation to the symptoms of a heart attack, would you have put yourself down as an at risk person for having a heart attack?

*Cathrina: Ehm, possibly. Even though I knew I had all my arteries cleared and whatever, but

*Cathrina: But, eh, it can happen again, so I suppose you can have a another blocked artery I suppose.

*Cathrina: I mean that was initially what they thought.

*Sharon: And what would have made you a candidate for, for a heart attack, generally.

*Cathrina: Well, I don't know. Because, I, I don't smoke. Ehm, my drink is a glass of wine which would be very very seldom, very, I, I don't drink, I don't eat junk food.

*Cathrina: I would be a fruit eater, vegetable eater

*Sharon: And do you have a family history of heart disease?

*Cathrina: Family history. Yes.

*Cathrina: My dad, I'm 58 and my Dad died of a massive heart attack at 58.

*Cathrina: Which is 50 year ago.

*Cathrina: So

*Cathrina: I mean, the difference in now and then. BUT, he was in the car beside my mother, and just (finger click) like that. So it was..

*Cathrina: probably very later.

*Cathrina: But then I have another brother who, ehm, had a quadruple bipass. And he, what he, he had his first heart attack at 58 aswell.

*Sharon: And you're 58 now.

*Cathrina: Yeah. I was 57 when I took it initially.

*Cathrina: in December. I've been 58 since May. So, it was too much..

*Sharon: like a coincidence.

*Cathrina: Oh, too many.

*Cathrina: And besides the point, my Dad's brothers ALL died just, one eh, you know, there was one man, he was shaving himself in the bathroom, dropped dead. There was another guy out on the street, walking along, collapsed and died.

*Cathrina: And this was in New York, or America, you know? So, ehm

*Sharon: Do you, would you say that's a typical picture of a heart attack, people drop down (overlap) on the ground.

*Cathrina: (overlap) Ah yeah, (stop overlap) I would say so. It hasn't happened to me. Thank God, but eh, and funny, even though I had the very bad severe pain first time, I didn't feel any way like I was going to lose my balance.

*Sharon: Oh would you have expected that? Like, what would you have expected the main symptoms of a heart attack to be or what would you have said that..

*Cathrina: A collapse, I would say.

*Sharon: Yeah, anything else?

*Cathrina: Ehm (pause), you get, you do get a weakey feeling.

*Cathrina: You do get that sort of (pause) you're not, like I noticed when I was HAVING my heart attack a while back, eh, I looked at myself in the mirror and my whole face changed colour.

*Cathrina: Like, I mean, I was like death warmed up.

*Cathrina: That's the best way, 'cause I would always have a reasonably good colour.

*Cathrina: And eh, looking at myself in the mirror, I said oh my God, I'm dying looking. Now, so, that's..

*Sharon: And did you have pain when you got a heart attack.

*Cathrina: (half whisper) Severe pain.

*Sharon: And would that be the main symptom you would associate (overlap) with a heart attack?

*Cathrina: (overlap) THAT would (end overlap).

*Cathrina: That was the main symptom and that should tip me, like I mean I would have been in VERY good form (pause) eh, we'll say, at half 5, it happened at five to 6 (pause)

*Cathrina: in the evening. And ehh, er, I hair, do hairdressing and I have my own salon, eh, cu, my last customer left at half 5.

*Sharon: Okay.

*Cathrina: and when she heard that I had a heart attack, she just couldn't believe it.

*Sharon: mmm. She thought it was her fault when she heard (overlap) did she? (laugh)

*Cathrina: (overlap) She couldn't believe it (end overlap) because, she said you were, in the BEST of form, which I was.

*Cathrina: And it just sort of hit me like that.

*Sharon: So if you were to describe ehm, a heart attack to a friend of yours, if you were trying to, tell her look, this is the thing to look out for, what would you say?

*Cathrina: Eh,well, severe pain is certainly the major factor.

*Cathrina: I would say.

*Cathrina: In MY experiences now.

*Cathrina: I mean there's other people that die in their sleep, don't they?

*Cathrina: Just take a heart attack in their sleep. Which would have to be a silent type of thing.

*Cathrina: Now in my case downstairs THIS time, that spasm thing, I presume if I was in my own home, I would be dead.

*Cathrina: Because you're gaspin, you know, you're just, like the oxygen is being pumped into you but what about if you weren't?

*Cathrina: If you were in the house by yourself? I couldn't see that just blowing over.

*Cathrina: You know, I just couldn't. I PRESUME what they do in the, in the spasm bit is, they give you something to try and relax your muscles. (overlap) The same as it would be

*Sharon: (overlap) That's right, the coronary aterey (end overlap)

*Cathrina: in your

*Cathrina: your leg. Well that's what I was describing so it would be ehm (pause). I know they gave me an asprin to chew.

*Sharon: That's right.

*Cathrina: Gave these tablets to chew.

*Cathrina: Which luckily enough, I had my swallow.

*Cathrina: You know? If I hadn't got my swallow, I was, bunched altogether.

*Cathrina: And how does it work so fast? The aspirin? You know that (overlap) seemed to

*Sharon: (Overlap) yeah, what it does (end overlap) is actually break down the clot. If it's a clot causing the spasm or causing,

*Cathrina: hang on I have to get this

*Sharon: It starts to act on that straight away. Its very fast acting you know.

*Cathrina: Right.

*Sharon: And whether you're also dealing with, they opened your artery to dilate it, so it stopped the spasms.

*Cathrina: Yes.

*Sharon: And Im thinking the relief that you (overlap) must have had

*Cathrina: (overlap) yes, oh very (stop overlap) much so. That actually would relieve me in a matter of seconds.

*Cathrina: I'd say.

*Sharon: Were you afraid? Scared?

*Cathrina: Frightened. (whisper) Out of my mind with (normal voice) particularly the fact that I was lucky that the people all arournd my and they were looking at the screen and they were, you know, they were doing all sorts of, things, that I just knew I had to work away on, getting as much oxygen in as I possibly could.

*Cathrina: In order to alleviate you know,

*Cathrina: whatever pressure

*Cathrina: and it was, the o, if I hadn't had that COLD, because the (half whisper) sweat literally poured out through me.

*Cathrina: The bed underneath me was just

*Cathrina: soaking, SATurated.

*Cathrina: You know. So, it was ehm, it was a terrible experience. You know. And still Im just thinking I know, ehm, they took my weight yesterday.

Cathrina: and I said, she said to me, 'what weight are you?', 9 stone?'. I said 'well, I must be less than that after perspiring so much'

*Cathrina: I never lost an ounce.

*Sharon: right (laugh)

*Cathrina: (laugh) You know what I mean? But, eh (laugh), I felt so weak

*Sharon: (overlap) Isn't that (end overlap) typical?

*Cathrina: Ah, to God, because when I came back up from having the angiogram done, I got exactly the same weakness again only I didn't get any, I got a bit of a palpitation here alright.

*Cathrina: but I didn't get any chest pain. But the water just (half whisper) poured out through me again.

*Cathrina: You know. So.

*Sharon: Ehm Just one more question to ask you. Do you know any other eh, oh yeah, in relation to heart attacks, do you think in Ireland, in Dublin for example, that men or more likely to have heart attacks than women or is it even stephens?

*Cathrina: well, I tell you, because in, now, because I work in a hairdressing salon ehm, I do, well I did more men and women. Its such a, 50/50 nearly now. Its getting more. You know. That you hear of people having spasms of heart trouble and you know,

*Cathrina: and there is so many people on high blood pressure tablets relating to heart.

*Cathrina: So I would, well, even when I was doing the rehab course,

*Cathrina: there was actually more women than men.

*Sharon: I know. That, that's very unusual. That's great.

*Cathrina: That was it.

*Cathrina: (overlap) yeah, that was (end overlap) there was actually more, tha, even Geraldine said that.

*Cathrina: She said eh 'well, we actually ha, this is, doesn't happen very often'

*Cathrina: 'but we actually have more women than men'.

*Sharon: Yeah. And would you have known up to that, would you have known any other women who have had heart attacks?

*Cathrina: Oh yes I would.

*Sharon: Would you?

*Cathrina: Oh yeah, and I would have known women who actually (pause) died.

*Sharon: Really, okay.

*Cathrina: Yeah.

*Cathrina: I would. And on our, a couple of occasions in my shop, eh, women took heart attacks.

*Sharon: In your

*Sharon: While they were having (overlap) their hair dr

*Cathrina: (overlap) yeah, yeah (stop)

*Sharon: Oh goodness.

*Cathrina: Now what happened was, a terrible weakness came over them.

*Cathrina: I would bring them out to the door to get as much air as possible into them. We called an ambulance, it only happened twice, thanks be to God, but, they were heart attacks

*Cathrina: when they brought to the hospital, they had had, they had gone through a heart attack and I said, well thanks be to God (interupt)

*Sharon: It wasn't yours, the style you'd put them in or anything?

*Cathrina: (laugh loud) they were only HAVING a set. (overlap) I'm thinking they weren't having a big job done, you know, yeah

Cathrine: They weren't actually. But ehm, yes I would say, its getting like that.

*Sharon: yeah

*Cathrina: I know the ones that are terrible things, you know men were, my God, no matter what age they were they were being affected. But I, I think that the women catching up very, unfortunately, they are. Yeah.

*Sharon: Listen, (Rena) that's all the questions I need to ask you.

*Cathrina: Lovely. If I was any help to you. (overlap) I hope.

*Sharon: (overlap) No, that was (end overlap) that was fantastic. We'll finish the interview now. Now its 3:50 and its 23rd October.

Excerpt from Reflective Journal: Interview with Cathrina on 23.10.03

Although a little younger, Cathrina immediately reminded me of my own mum. She seemed like a very independent and assertive woman, who ran her own business and yet still found time to take care of her elderly mum. She worked through her illness experiences logically, and still didn't perceive her illness as a heart attack. I think this is a typical scenario of how experienced symptoms just didn't match expected symptoms. Cathrina mentions her husband very little during the interview, and it seemed to me that they might have lived somewhat separate lives. Although part of me wanted to explore this area in relation to the support she had received from him during her illness, I felt that it was probably a little too personal to broach during interview. Following the interview, Cathrina asked me many questions about medications, risk factors and returning to work. It was from these questions that I began to realise that Cathrina's home life was quite stressful, and that she received very little support there in relation to her health, work or family responsibilities. Despite this, she seemed to be an extremely strong and independent woman who enjoyed many aspects of her life, especially her work.

Excerpt from Field Journal: Interview with Lara 20.12.03

Lara is a 65 year old widow who lives alone in west Dublin. She has a supportive family near by. She was in the UK when her symptoms started - she had just attended her sisters funeral and found it extremely traumatic - they were very close. She has no medical insurance and arrived into hospital by car. She was a self- referral. She was 3 days experiencing the symptoms before she arrived into hospital. She was triaged within 20 minutes and was seen by a medic within 35 minutes. Her final diagnosis was transmural MI and she was too late for thrombolysis. Lara was 5 days following her MI when I met her and was a patient on a cardiac step-down unit. She was getting ready for discharge the next day.

Transcript of Interview with Lara (pseudo name) on Thursday 20th December, 2003 at 14:15

Sharon: Thursday the 20th of December at1 4.15. Lara, can you just tell me what happened to you before you came into hospital this time? I know you were over in England at a funeral.

Lara: Right.

Sharon: Could you just take it from there and tell me what happened to you again?

Lara: From when it happened to me?

Sharon: Yeah. From what happened on the way back and when it all started, when your symptoms started.

Lara: Right. I was late getting over for the church in the evening due to the plane

Sharon: Yeah.

Lara: Been held up for 7 hours. So, went out for a meal that night and next morning went to the funeral.

Sharon: Yeah.

Lara: Yeah. Ehm, which was very upsetting and then we went (pause) well, y', YOU know the afters.

Sharon: Yeah.
Lara: And then we went for a meal THAT evening and I woke up the next morning around five, and thought I had indigestion. STILL thought I had indigestion and, although it lasted, the pain in my chest lasted for about (pause) at least 3 hours.

Sharon: mm (overlap) hmm.

Lara: (overlap) I was (end overlap) lying in the bed. You know. Hoping for it to go. I got to Heatthrow.

Sharon: WHY did you think it was indigestion?

Lara: Because I had eaten a big meal, kind of later than I would normally eat. And a bigger meal than I would normally eat.

Sharon: Yeah. So it had lasted for about three hours. And did you do anything to try and get rid of it. Like what sort of things did you, did you try to do?

Lara: Oh I just rubbed it, I was on my OWN in the hotel.

Sharon: Yeah. Okay.

Lara: Now there was OTHER family in the hotel, but they were in different rooms or they had headed off home or,

Sharon: Yeah.

Lara: they were going different directions and, it just didn't occur to me to make a fuss. (pause) So when (overlap) I go again.

Sharon: (overlap) So you were rubbing your chest (end overlap) a bit?

Lara: Yeah.

Sharon: Yeah. Okay.

Lara: I'm lying there in the bed. And then about half nine I decided I have to get sorted, and get out, I had to, check out at eleven and my nephew was picking me up at a quarter past. So when I got to the Heathrow I bought Rennies.

Sharon: Okay.

Lara: And hoped that then (pause). And the Rennies DID seem to help.

Sharon: Okay.

Lara: But got home(overlap)

Sharon: (overlap) But did anyone advise you to take Rennies? (end overlap)

Lara: My daughter said to me why don't you get Rennies?

Sharon: Okay.

Lara: For the indigestion.

Sharon: Yeah.

Lara: Take three and take another three in half an hour, they usually work

Sharon: And they DID help a bit?

Lara: They SEEMED to help a bit.

Sharon: Okay.

Lara: So she made a big fuss when I got home you know, glad you're home okay, and all the rest of it. We'll just get you home and into bed an all. I was very tired. Exhausted from all what had gone on. So the next morning I woke up and my SHOULDERS (pause) my shoulders were hurting me and my back was on fire. But there again, I started to take the Rennies again.

Sharon: Yeah. You started taking Rennies again. And your back, it was quite bad the pain was it?

Lara: yeah. I went down to the Square and got the shopping and she rang me and said where are you and I said I'm at the Square.

Sharon: And all along in the Square was the back, the pain in your back still there?

Lara: Yeah.

Sharon: And what did you think it was?

Lara: I kept thinking, I was still kept thinking (whisper) twas (overlap) indigestion

Sharon: (overlap) indigestion (end overlap) yeah.

Lara: I mean, nobody ever says (pause). I, I mean, my husband died when he was standing, of a heart attack, and he just openly clutched his chest and I thought he was slow and maybe not, and he was gone.

Sharon: And is that what you expected a heart attack would be like?

Lara: And that what I expecting a heart attack to be like. I didn't know it was any different. I didn't have NO idea. I had no idea when I got to the hospital it was a heart attack (background noise: door bang)

Sharon: Okay. So lets go back. You were shopping in the Square and now tell me what you bought again, 'cause I think this is very funny. (laugh)

Lara: (laugh) I shouldn't have said that.

Sharon: Go on. Go on. (laugh)

Lara: They were selling all the Christmas cakes for eh thirty three and a third off.

Sharon: Yeah.

Lara: I think it was the last day. And I bought about fifty euro worth of eh

Sharon: Chocolate cake

Lara: Chocolate cake, sweets (Laugh),

Sharon: (laugh)

Lara: and different kinds of chocolate cakes and the front of the trolley was up to here with chocolate cake.

Sharon: (laugh) And all the time you still had this pain in your back.

Lara: (laugh) And I'm not even a big chocolate eater.

Sharon: Yeah (laugh).

Lara: But, its Christmas.

Sharon: (laugh)

Lara: No meat in the house but (laugh)

Sharon: Loads of chocolate cake (laugh).

Lara: Chocolate cake (laugh).

Sharon: Okay, so your daughter rang then.

Lara: And she said to me where are you, I'm in the Square, 'cause I don't drive.

Sharon: Yeah.

Lara: Oh my GOD she said, I'm coming down NOW. Just wait outside she said, and you're NOT to get any more shopping. I said, well I'm nearly finished, I've, she said you'd be MAD waiting on a taxi. So she came down, she came home with me with all the shopping. I'm VERY independent in anyhow, I have to say now.

Sharon: Yeah.

Lara: And SHE put all the shopping away and she made, oh no, I think we sent out for a fish and chip.

Sharon: Oh lovely.

Lara: And I couldn't eat them. I seen the fish and chip and took one piece out and oh my God, I'm choking. It was like as if something had, had STARTED something again in the chest.

Sharon: Yeah.

Lara: Something, you know. ONE piece of food and that's it. And that was the whole story.

Sharon: So after the piece of food, what happened then?

Lara: Then she made me go down to the doctors.

Sharon: Did the pain get bad again after the food.

Lara: Yeah. The pain got REALLY bad then and just (background noise: door banging) kind of, it was MOSTLY in the back, it was pushing me back against the wall with the pain.

Sharon: Yeah. And did you think it was indigestion even then?

Lara: I did

Sharon: But your daughter insisted on bringing you?

Lara: Absolutely.

Sharon: Would you have gone otherwise do you think?

Lara: No (laugh).

Sharon: (laugh)

Lara: I mean I have to be h', honest (laugh). If I'd have been in the house on me own, no I wouldn't have.

Sharon: So, tell me now, when you go down to the hospital, was it quicker than you thought it would be or were you delayed?

Lara: No, we weren't delayed at all, it was kind of change over time.

Sharon: Yeah.

Lara: And what happened was, we were very (pause). We were twenty minutes sitting on eh, waiting for a triage nurse, it must be, yeah, I think it was kind of change. I'm not sure.

Sharon: Yeah.

Lara: But there was nobody there. But as soon as she came back, I told her the story, I was left sat, sitting outside. They were ALL very calm (laugh).

Sharon: (laugh)

Lara: And, everybody was, you know wherever was wrong with them, and I thought, its strange we're getting called first. You know, I'm sure there's somebody whose be, must be before me.

Sharon: mm hmm.

Lara: And eh, kind of looked and thought God, they're going to be telling me off now (overlap) and think you coming first

Sharon: (overlap) yeah, yeah (end overlap)

Lara: But I was taken into a whole different part.

Sharon: Uh huh.

Lara: Res', ehm.

Sharon: The Resus Room?

Lara: That's it, the Resus Room.

Sharon: Yeah.

Lara: And all me clothes was off before where I knew where I was (laugh).

Sharon: (laugh)

Lara: And in a green BAG and and I was in a GOWN and getting monitored and that, you know. Holy (pause) GOD (laugh). And then my daughter panicked because my granddaughter was with us.

Sharon: Yeah.

Lara: So. And here I am now.

Sharon: And when they said that you had a heart attack how did how did you react to that? Were you surprised, were you..?

Lara: I found they were VERY subtle. They weren't (pause) I think it was (pause) the day after. It was, oh, I'll tell you when it was. It was the nurse who took me to the ehm, care unit?

Sharon: Yeah, Coronary Care Unit.

Lara: Coronary Care Unit. She said, do you know what's happened? She said to me. And I said, not really. I said I assumed something to do with me heart, I'm up here. She said, you'd a MILD heart attack. And then as it was going on, they were adding

Sharon: Yeah.

Lara: to it.

Sharon: Okay.

Lara: So they were very, ehm ehm

Sharon: Subtle with their information

Lara: Subtle with, yeah. I found anyway.

Sharon: And were you shocked or were you surprised you'd had a heart attack? Did you-

Lara: ABSOLUTELY.

Sharon: You didn't think you'd had one?

Lara: No.

Sharon: And would you not put yourself as a likely candidate for a heart attack?

Lara: Not at all.

Sharon: Why not?

Lara: (pause) Because I have a big dog (laugh). I've always had dogs, but this one's nine years old and he's a rough collie and he needs a lot of exercise. And even though he's nine years old he won', I take him out EVERY morning at seven and, at least till eight o'clock in the park. I walk EVERYwhere. I walk up to collect my granddaughter which is twenty minute walk and back in the afternoon. I RARELY take the bus. I thought that exercise', you know what they say, go walking, you know?

Sharon: Yeah. Yeah.

Lara: But I've ALWAYS done that.

Sharon: And your cholesterol? Do you have a high cholesterol or a low cholesterol?

Lara: I never had a high, or, I had a high cholesterol years ago and got it down myself and they TOLD me I didn't have, I didn't have high cholesterol, [I was very good], ehm, what else did they say? (pause) ehm (long pause). The only thing seemed to be against me was the cigarettes.

Sharon: Yeah. And do you still smoke?

Lara: Well I haven't smoked since I came in here. (laugh)

Sharon: Right (laugh)

Lara: Right, w', I didn't even chase off today looking (laugh).

Sharon: Yeah

Lara: Which I normally would have looking for a place to smoke. I do. I've a twenty year old son. And I thought his dad died when he was only two and a half. And I thought', I'm not going to leave him if I can help it so.

Sharon: Okay

Lara: I won't smoke again.

Sharon: Okay.

Lara: Ehm.

Sharon: And tell me, who would you have thought would be most likely to have a heart attack? Men or women in society?

Lara: I always thought men. Because of what happened my husband, I suppose.

Sharon: Yeah.

Lara: I always thought men were more at risk.

Sharon: Yeah.

Lara: I mean, I'm not overweight and (overlap) I'm not, I'm very

Sharon: Yeah, you're not at all. (end overlap)

Lara: active.

Sharon: Mmm hmm.

Lara: I put it down to the stress I'm under

Sharon: Yeah, yeah. I'd say that added to it alright you know.

Lara: Yeah.

Sharon: Ehm. Felt very stressful what you went through.

Lara: Of course. VERY stressful. And I, with all this going on, I can't really GREIVE for her, you know?

Sharon: Yeah, I can imagine

Lara: So I' kind of, oh, I don't know.(overlap) Very strange.

Sharon: It'll probably hit you now (end overlap) when you go home.

Lara: Probably will.

Sharon: A little bit more.

Lara: Might give me a (whisper/laugh) heart attack.

Sharon: Oh don't say that (heart attack).

Lara: But they showed me the angiogram.

Sharon: Angiogram, uh huh.

Lara: And it, the, head nurse what she was saying like, that 60% of my heart is like this. The muscle is fine. There's absolutely no disease in the muscle. And that side. Am I going the right way around? That side is no disease or anything like that.

Sharon: Okay.

Lara: And its just 40% this side which she said, some people have to get, she was showing me how they have to get bypass, s'you won't have to get anything like that. Now they brought me down because they would have thought they might have to get a sh',

Sharon: Stent

Lara: Shunt or Stent or whatever.

Sharon: Stent. Yeah.

Lara: and they didn't have to do (whisper) anything like that

Sharon: Oh right. Okay.

Lara: So they said, ehm, medication should

Sharon: Okay, that's good.

Lara: so, clear it up.

Sharon: Can I take you back? Ehm, do you know any other WOMEN who have had a heart attack?

Lara: (pause)

Sharon: AND who are alive?

Lara: No, I DON'T actually. That's the strange thing,

Sharon: Yeah.

Lara: I don't. The, it was IN my family. I mean m', my mother died of Alzheimers, she was eighty five and my father died of cancer. You know, there's nobody in my family, only IMMEDIATE family, you know, that I know of, have had a heart disease. It could have been before.

Sharon: Right. Okay.

Lara: Grandparents or whatever, I don't know. But your not my mother or father or, well, my brothers are all young. You know.

Sharon: And when you were having the, the bad pain in your back that time, how did you feel? Were you afraid when you had the pain?

Lara: Not at all.

Sharon: Not at all. And when you're sick usually, do you tend to kind of, sort it out yourself or would you?

Lara: Yeah, I'm very laid back.

Sharon: Would you go down to the GP?

Lara: No.

Sharon: No. Would you sort things out yourself more?

Lara: Yeah.

Sharon: Yeah, you would be more like that would you?

Lara: Yeah.

Sharon: Why is that do you think?

Lara: (pause) No, MY kids are all the same. God, it so hard to get you to the doctor. The LEAST things wrong with us and you have us marching over there. I DON'T KNOW why that is.

Sharon: But for yourself you'd be kind of, you'd be more laid back? (laugh)

Lara: Yeah. I'll be grand (laugh) you know.

Sharon: And eh, the other thing I wanted to ask you was, when you came into hospital, did you come in by car or by ambulance?

Lara: By car.

Sharon: Why did you not ring the ambulance?

Lara: 'Cause I didn't think it was that ser', I didn't think I'd bother them. (laugh) You know, I'd be thinking for god sake its only a pain in my chest, you know?

Sharon: Yeah. Yeah.

Lara: I don't KNOW.

Sharon: (laugh)

Lara: It sounds STUPid now. Maybe we should KNOW more.

Sharon: Well, if this ever happens to you again, take an ambulance in.

Lara: Yeah.

Sharon: Okay. Ehm, did you call your G.P. at all?

Lara: No.

Sharon: WHY didn't you call your G.P.?

Lara: Well, he's not there on a Saturday (overlap) anyway.

Sharon: (overlap) Alright, that's ok, (end overlap) that's good reason enough.

Lara: Yeah. He doesn't be there on a Saturday.

Sharon: I do', I don't think I actually have any more questions to ask you. Let me see. (pause) No that, that's, that's all the questions I (overlap) have to ask you.

Lara: (overlap) Oh right, its brilliant. (end overlap)

Sharon: Can I just say though, before you went to England, were you feeling okay before you went to England? Before you flew over?

Lara: I thought I had a chest infection.

Sharon: Yeah. Were you feeling tired or anything?

Lara: I was (pause) yeah, I WAS feeling tired 'cause I remember my daughter said to me, well you ought to go over and get an antibiotic. Your chest doesn't sound too good. She, she (background noise overlap: door banging) had to remind me of that so as I didn't remember it.

Sharon: Right. Okay.

Lara: You know. So, maybe I, I was getting a chest infection or something, I don't know. Or maybe it was starting then in the heart.

Sharon: Yeah. Yeah.

Lara: The stress could have been building up. I don't know.

Sharon: Yeah. Well come here, that's it. That's all I have to ask you.

Lara: Okay.

Sharon: Listen, thanks SO much, that was great.

Lara: Okay.

Sharon: We'll turn that off now. Okay, interview ends at, two forty five.

Lara: I hope you can use it now.

Sharon: Yeah its great, its great. Honestly.

Lara: Will you show me how to get back to the ward

Sharon: (overlap). Okay. It's Two forty five.

Excerpt from Reflective Diary: Interview with Lara: 20.12.03

This was probably my most difficult interview. I was told by one of the staff members that Lara was well enough to be interviewed – she was about to be discharged home for Christmas. I searched through her medical notes and ascertained the timing of events such as referral source, admission to hospital, triage, treatment time etc; however, I didn't review her notes in detail as I didn't want the medical interpretation of her pre-hospital events to influence the interview - I really wish I had done now. I introduced myself to Lara, informed her about the study and invited her to participate in it. Although I felt she seemed a little shell-shocked (which at the time I put down to the heart attack) she appeared to be very interested in the study and suggested that interview was done straight away that afternoon because she was going home the next morning. Before the interview started she mentioned that her symptoms had begun when she was in England at a funeral. On further probing, she told me that it was her sister who had died, and she had been very upset. I suggested that we might leave the interview until another time, but she was emphatic that she wanted to do it. I felt so awful having invited her to participate in the study, and really wished that I had read her notes more carefully before I had approached her. I was really annoyed with myself at first as I felt that I had intruded into an extremely vulnerable episode of her life. During the interview, I didn't talk about her sisters death as I felt it would be inappropriate and insensitive to tape such a discussion. However, we sat talking for another 25 minutes after the interview ended, and she told me about her sister and how she just felt numb about it all – she cried a little, and so did I!

Appendix XVII

Letter to Participants

9 Newhall Court
Blessington Rd
Dublin 24

03.02.04

Dear ,

It was good to talk with you on Tuesday evening, and as promised I've sent you the transcript of our conversation whilst you were in hospital with your heart attack. You will notice that your real name is typed at the top of the page, however I shall only ever use your fictitious name in my thesis. The interview was transcribed by a secretary, so it contains an unedited version of the conversation – because of this, it may seem a little unusual to read! However, it shouldn't take you more than 15 minutes to read it.

If any of it is incorrect, or if you would like to amend it in any way, then please feel free to do so. You can make your comments directly onto the transcript and send it back to me, or you can add additional information on the enclosed blank sheet. As you know, my thesis was examining the events that took place before you came into hospital, so if you think that we missed out on something important, than please include that also! I shall ring again in the next couple of days, to see how you're getting along.

Once again, I would like to thank you so very much, for assisting me with my thesis, and for participating in this extremely important research. I am confident that your participation will increase our knowledge about women and heart disease in Ireland, and as a result will help many other Irish women.

Yours with sincerity,

.....

Sharon O' Donnell
Cardiac Research Nurse
Ph: 01 4622060

Appendix XVIII

Analysis of Interviews

Development of nodes from interview transcripts with QSR N6 Student Version of NUD*IST

REPORT ON NODE (1) '/Symptom Interpretation'

****

(1)/Symptom Interpretation

*** Description: Symptom interpretation refers to the efforts that participants made to understand their condition and includes the words they used to describe their symptoms. Under this node I included the aspects if their lives that influenced how they interpreted their symptoms such as co-morbidities, perceived personal risk, previous illness experiences and their image of a typical MI patient.

*** Created: 6:25 pm, Feb 19, 2004.
*** Last modified: 6:43 pm, Feb 19, 2004.

*** The siblings of this node are:
(2) /Cognitive Response
(3) /Reappraisal
(4) /Personal Risk:
(5) /Emotional Response
(6) /Women's Roles
(7) /Covert Coping
(8) /Overt Coping
(9) /Stimulus

*** The children of this node are:
(1 1) /Symptom Interpretation/Personal risk 1
(1 11) /Symptom Interpretation/Interpreting symptoms
(1 12) /Symptom Interpretation/Mismatch of expected and experienced
(1 15) /Symptom Interpretation/Personal risk
(1 21) /Symptom Interpretation/Most likely candidate
(1 22) /Symptom Interpretation/Stress and tension
(1 25) /Symptom Interpretation/Describing a heart attack
(1 26) /Symptom Interpretation/Other women with heart attacks
(1 27) /Symptom Interpretation/Co-morbidity
(1 28) /Symptom Interpretation/Influence of Previous Experience
(1 34) /Symptom Interpretation/Clean Bill of Health
(1 40) /Symptom Interpretation/Relationship with pain
(1 43) /Symptom Interpretation/Comparing self to others
(1 44) /Symptom Interpretation/Cues

*** Documents coded by this node are:
1: Annette 2: Annie 3: Breda 4: Cathrina
5: Deirdre 6: Lara 7: Linda 8: Mary
9: Patricia 10: Pauline 11: Rebecca 12: Una

*** This is 12 documents out of 12, = 100%

REPORT ON NODE (2) '/Cognitive Response'

****

(2)/Cognitive Response

*** Description: This node describes the actions and thoughts of participants when confronted with their symptoms. I considered these actions to be influenced by previous experiences and also by their desire to stay in control of the situation.

*** Created: 6:29 pm, Feb 19, 2004.
*** Last modified: 6:29 pm, Feb 19, 2004.

*** The children of this node are:
(2 9) /Cognitive Response/Cognitive Response
(2 10) /Cognitive Response/Not wanting to make a fuss
(2 19) /Cognitive Response/Personal Control
(2 28) /Cognitive Response/Influence of Previous Experience

*** Documents coded by this node are:
1: Annette 2: Annie 3: Breda 4: Cathrina
5: Deirdre 6: Lara 7: Linda 8: Mary
9: Patricia 10: Pauline 11: Rebecca 12: Una

*** This is 12 documents out of 12, = 100%

REPORT ON NODE (3) '/Reappraisal'

****

(3)/Reappraisal

*** Description: This node describes the re-evaluation process that participants went through when attempting to resolve their symptoms. Re-labelling their symptoms to a health threat was assisted by the inclusion of others into the experience and by their desire for safety.

*** Created: 6:36 pm, Feb 19, 2004.
*** Last modified: 6:36 pm, Feb 19, 2004.

*** The children of this node are:
(3 2) /Reappraisal/Influence of Others
(3 14) /Reappraisal/Reappraisal
(3 38) /Reappraisal/Safe Place

*** Documents coded by this node are:
1: Annette 2: Annie 3: Breda 4: Cathrina
5: Deirdre 6: Lara 7: Linda 8: Mary
9: Patricia 10: Pauline 11: Rebecca 12: Una
*** This is 12 documents out of 12, = 100%

REPORT ON NODE (4) '/Personal Risk'

****

(4)/Personal Risk:

*** Description: This node describes how participants viewed their risk for a heart attack. It includes their description of the typical MI patient, as I felt that this image influenced their perceived personal risk for the condition. I also included descriptions of factors that they perceived would increase the likelihood of a heart attack as well as the comparisons they make between themselves and the typical cardiac patient.

*** Created: 6:45 pm, Feb 19, 2004.
*** Last modified: 6:45 pm, Feb 19, 2004.

*** The children of this node are:
(4 15) /Personal Risk/Personal risk
(4 21) /Personal Risk/Most likely candidate
(4 22) /Personal Risk/Stress and tension
(4 26) /Personal Risk/Other women with heart attacks
(4 43) /Personal Risk/Comparing self to others

*** Documents coded by this node are:
1: Annette 2: Annie 3: Breda 4: Cathrina
5: Deirdre 6: Lara 7: Linda 8: Mary
9: Patricia 10: Pauline 11: Rebecca 12: Una

*** This is 12 documents out of 12, = 100%

REPORT ON NODE (5) '/Emotional Response'

****

(5)/Emotional Response

*** Description: This node incorporates all the emotional responses expressed by participants throughout the entire illness experience.

*** Created: 7:46 pm, Feb 19, 2004.
*** Last modified: 7:46 pm, Feb 19, 2004.

*** The children of this node are:
(5 8) /Emotional Response/Emotional Response
(5 10) /Emotional Response/Not wanting to make a fuss
(5 20) /Emotional Response/Denial
(5 29) /Emotional Response/Humour
(5 32) /Emotional Response/Needing someone
(5 35) /Emotional Response/Talk of death or dying
(5 38) /Emotional Response/Safe Place

*** Documents coded by this node are:
1: Annette 2: Annie 3: Breda 4: Cathrina
5: Deirdre 6: Lara 7: Linda 8: Mary
9: Patricia 10: Pauline 11: Rebecca 12: Una
*** This is 12 documents out of 12, = 100%

REPORT ON NODE (6) '/Women's Roles'

****

(6)/Women's Roles

***Description: This node describes all the responsibilities that participants discussed throughout the course of their interviews. I included 'husbands' within this node to provide context for this node as sometimes husbands helped with these responsibilities whilst at other times they appeared to add to them. I also included personal control here because it seemed that in continuing their daily roles, control was maintained.

*** Created: 8:06 pm, Feb 19, 2004.
*** Last modified: 8:06 pm, Feb 19, 2004.
*** The children of this node are:
(6 4) /Women's Roles/Living alone
(6 17) /Women's Roles/Husbands
(6 19) /Women's Roles/Personal Control
(6 30) /Women's Roles/Women's Roles

*** Documents coded by this node are:
1: Annette 2: Annie 3: Breda 4: Cathrina
5: Deirdre 6: Lara 7: Linda 8: Mary
9: Patricia 10: Pauline 11: Rebecca 12: Una
*** This is 12 documents out of 12, = 100%

REPORT ON NODE (7) '/ Maintaining Control

****

(7) / Maintaining Control

*** Description: This node describes the strategies that participants used to control their environment and hide their condition from others. It also contains descriptions of their desire to stay in control. I included humour here, as many women in hindsight, seemed to laugh at themselves and aspects of their pre-hospital behaviour.

*** Created: 8:08 pm, Feb 19, 2004.
*** Last modified: 8:09 pm, Feb 19, 2004.
*** The children of this node are:
(7 9) / Maintaining Control/Cognitive Response
(7 16) / Maintaining Control /Cover up strategies
(7 19) / Maintaining Control /Personal Control
(7 29) / Maintaining Control /Humour
(7 30) / Maintaining Control /Women's Roles

*** Documents coded by this node are:
1: Annette 2: Annie 3: Breda 4: Cathrina
5: Deirdre 6: Lara 7: Linda 8: Mary
9: Patricia 10: Pauline 11: Rebecca 12: Una
*** This is 12 documents out of 12, = 100%

REPORT ON NODE (8) '/Relinquishing Control

****

(8)/ Relinquishing Control

*** Description: This node describes how women eventually allowed others into their illness scenario. Most participants included family and friends first, and through their influence sought medical help. I've included GP and ambulance here to provide contextual data related to the type of help they sought when they relinquished control to others

*** Created: 8:10 pm, Feb 19, 2004.
*** Last modified: 8:10 pm, Feb 19, 2004.
*** The children of this node are:
(8 2) / Relinquishing Control/Influence of Others
(8 14) / Relinquishing Control/Reappraisal
(8 18) / Relinquishing Control/Ambulance
(8 23) / Relinquishing Control/GP
(8 32) / Relinquishing Control/Needing someone
(8 38) / Relinquishing Control/Safe Place

*** Documents coded by this node are:
1: Annette 2: Annie 3: Breda 4: Cathrina
5: Deirdre 6: Lara 7: Linda 8: Mary
9: Patricia 10: Pauline 11: Rebecca 12: Una
*** This is 12 documents out of 12, = 100%

REPORT ON NODE (9) '/Stimulus'

****

(9)/Stimulus

***Description: This node describes the stimulus to coping behaviour. It includes descriptions of what participants were doing when their symptoms started as well as descriptions of what the symptoms were like. I've included both prodromal and intense symptoms here as all participants described an evolving condition.

*** Created: 12:06 pm, Feb 20, 2004.
*** Last modified: 12:07 pm, Feb 20, 2004.
*** The children of this node are:
(9 1) /Stimulus/Background Scenarios
(9 5) /Stimulus/Prodromal Symptoms
(9 7) /Stimulus/Intense onset
(9 36) /Stimulus/Symptoms
(9 44) /Stimulus/Cues

*** Documents coded by this node are:
1: Annette 2: Annie 3: Breda 4: Cathrina
5: Deirdre 6: Lara 7: Linda 8: Mary
9: Patricia 10: Pauline 11: Rebecca 12: Una
*** This is 12 documents out of 12, = 100%

Emergent Main Themes

****

Theme 1: Stimulus: Seeking Understanding:

(1)/Symptom Interpretation
(2)/Cognitive Response
(5)/Emotional Response
(4)/Personal Risk:
(9)/Stimulus

Theme 2: Covert Coping: Seeking Sense of Self

(2)/Cognitive Response
(5)/Emotional Response
(7) /Maintaining Control
(6)/Women's Roles

Theme 3: Reappraisal: Seeking Meaning

(3)/Reappraisal
(2)/Cognitive Response
(5)/Emotional Response

Theme 4: Overt Coping: Seeking Safety

(2)/Cognitive Response
(5)/Emotional Response
(8)/ Relinquishing Control

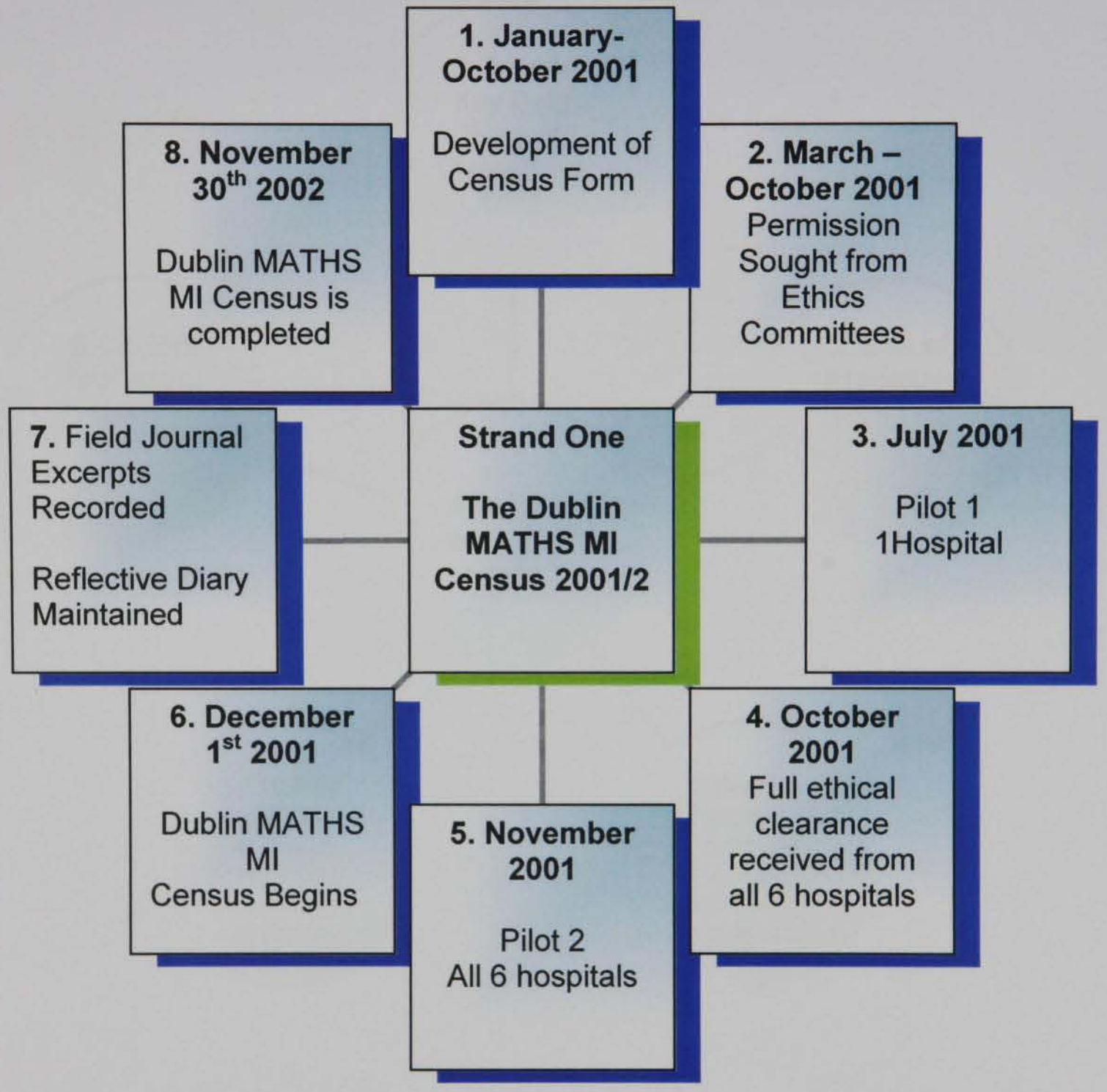
Appendix XIX

Strand Maps

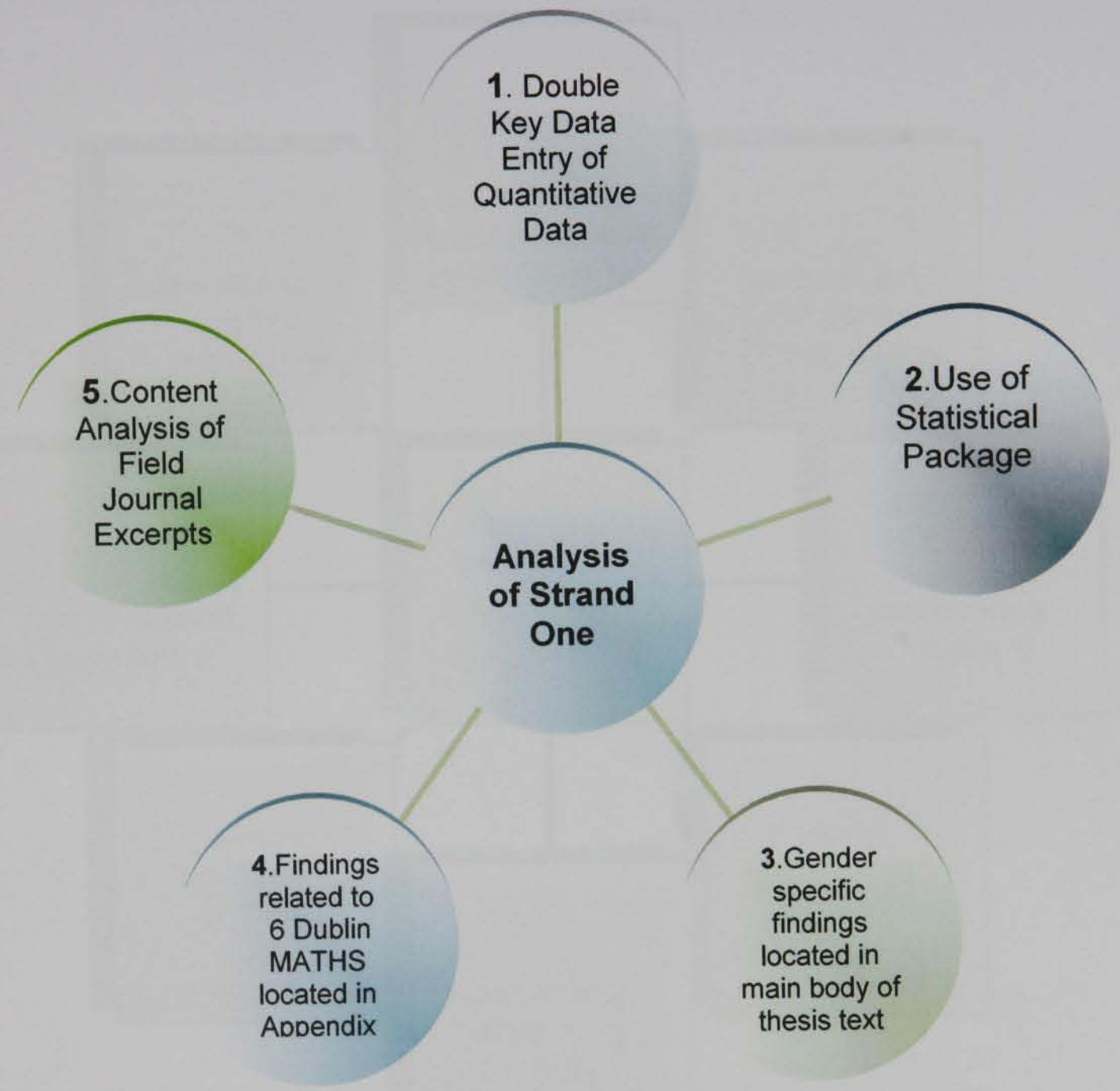
Appendix XIX

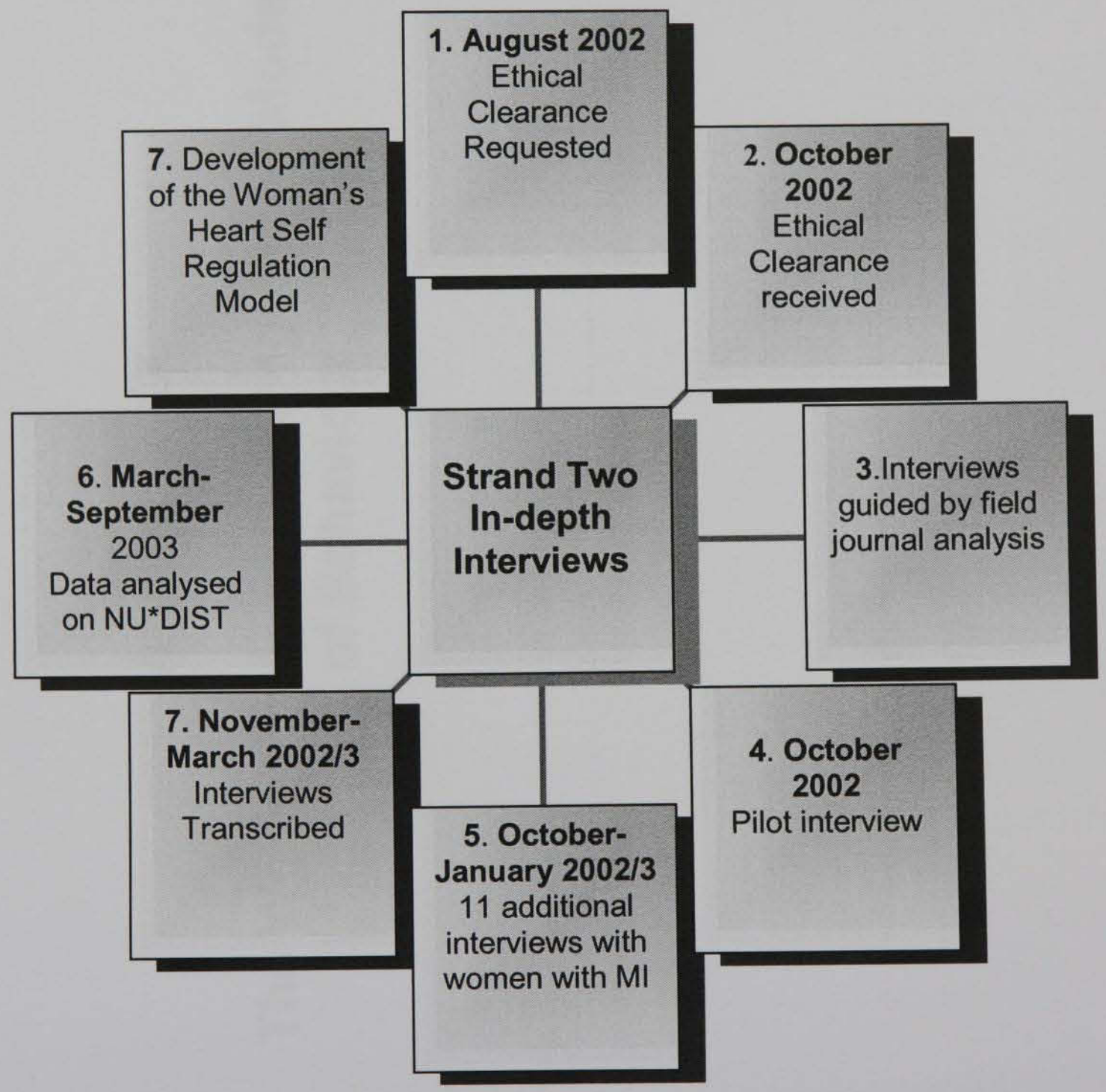
Strand Maps

Map of Strand One Developments



Map of Strand One Data Analysis

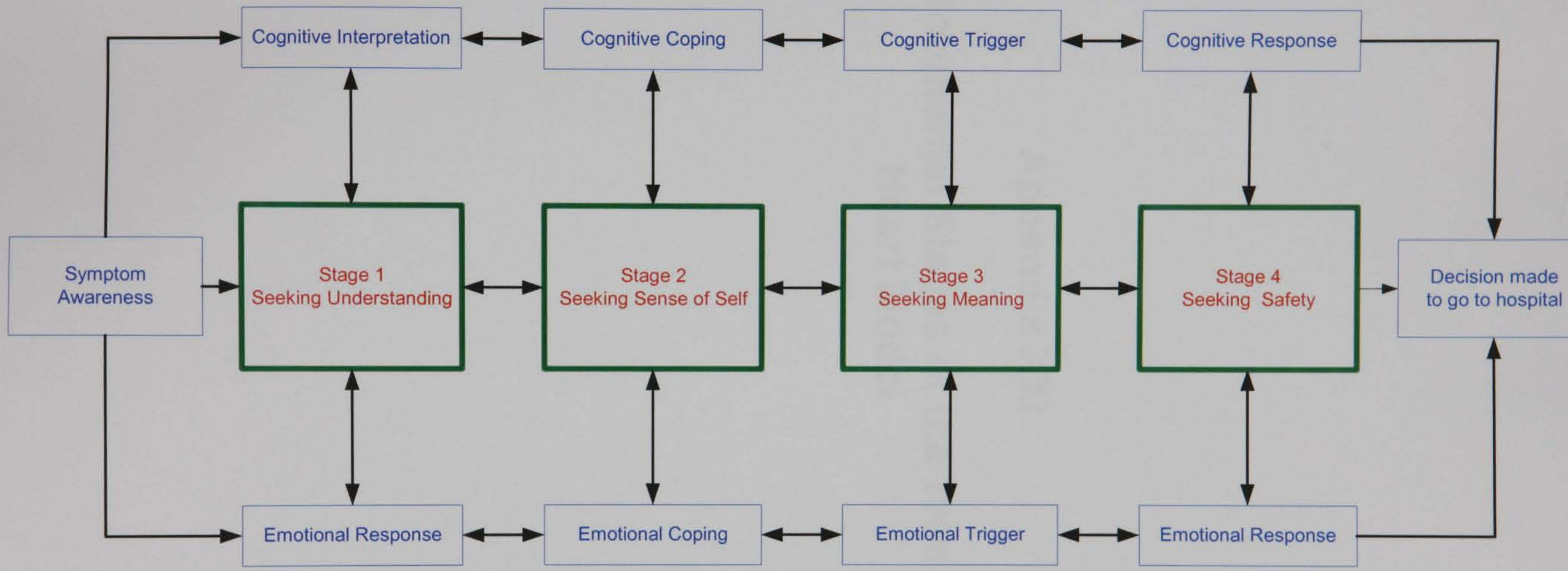



1. August 2002
Ethical
Clearance
Requested
2. October
2002
Ethical
Clearance
received
3.Interviews
guided by field
journal analysis
4. October
2002
Pilot interview
5. October-
January 2002/3
11 additional
interviews with
women with MI
6. March-
September
2003
Data analysed
on NU*DIST
7. Development
of the Woman's
Heart Self
Regulation
Model
7. November-
March 2002/3
Interviews
Transcribed
Strand Two
In-depth
Interviews

Appendix XX

The Woman's Heart Self-Regulation Model of Behaviour

The Woman's Heart
Self Regulation Model of Behaviour



Appendix XXI

Developmental Stages of the Woman's Heart Model

Continuum/Cycle/Journey of

Cognitive Response:
- Time-line
- Self-Treatments
- Relationship with pain/illness
- Attempts at Normalisation
- Women's Roles

Cognitive Response:
- Social Messages
- Influence of others

Symptom Awareness:
- Prodromal Symptoms →
- Intense Symptom

Seeking Understanding ←→

Interpretation:
- Cause
- Mismatch of symptoms
- Perceived Personal Risk
- Social Messages
- Medical Messages
- Previous Experience

↑
Covert Action: ←Seeking Sense of Self→
↓

(Re)-assessment:/ Seeking Meaning:

←Non-Health threat versus Health threat→

Overt Action: Seeking Others

Psychological Response:
- Dismissive
- Concern
- Not wanting to make a fuss
- Denial
- Feeling Vulnerable
- Fear
- Talk of death and dying

Psychological Response:
- Seeking Permission
- Feeling Vulnerable
- Fear
- Talk of death and dying

Continuum/Cycle/Journey of

Symptom Awareness:
- Prodromal Symptoms →
- Intense Symptom

Cognitive Response:
? Cognitive and emotional response parallel each other all the way through

↑
Seeking Understanding
←→
Getting a handle on things
↓

Emotional Response

Interpretation:
- Cause
- Mismatch of symptoms
- Perceived Personal Risk
- Social Messages
- Medical Messages
- Previous Experience

Cognitive Response:
- Time-line
- Self-Treatments
- Relationship with pain/illness
- Attempts at Normalisation
- Women's Roles

↑
Covert Action:
Establishing Control of Situation/ Maintaining Status Quo/ Normalisation/Keeping a lid on it
←Seeking Sense of Self→
↓

Emotional Response:
- Dismissive
- Concern
- Not wanting to make a fuss
- Denial
- Feeling Vulnerable

(Re)-assessment:/ Seeking Meaning:

←Non-Health threat versus Health threat→

Fear takes a grip and attempts at normalisation, be they cognitive or emotional, can't normalise fear.

The fear of loosing control of the situation/fear of the looming consequences provides the impetus for action

Cognitive Response:
- Social Messages
- Influence of others

↑
Overt Action: Seeking Others
↓

Psychological Response:
- Seeking Permission
- Feeling Vulnerable
- Fear
- Talk of death and dying

Continuum/Cycle/Journey of

Cognitive Interpretation:
- Cause
- Mismatch of symptoms
- Perceived Personal Risk
- Social Messages
- Medical Messages
- Previous Experience

Cognitive Coping:
- Time-line
- Self-Treatments
- Relationship with pain/illness
- Attempts at Normalisation
- Women's Roles
- Convenience

Cognitive Trigger:
- Symptoms worsen or continue
- Time-line

Cognitive Deliberation:
- Social Messages
- Seeking Permission
- Making contact

Symptom Awareness:
- Prodromal Symptoms →
- Intense Symptom

↑
Stimulus: Seeking ←Understanding→
↓

↑
Covert Action: ←Seeking Sense of Self→
↓

(Re)-assessment: Seeking Meaning

←Non-Health threat

↑
Health threat →
↓

↑
Overt Action: Seeking Others
↓

Emotional Response:
- Curiosity
- Irritation
- Concern

Emotional Coping:
- Avoidance
- Denial
- Concern
- Not wanting to make a fuss
- Control

Emotional Trigger:
- Feeling Vulnerable
- Fear

Emotional Response:
- Talk of death and dying
- Seeking Safety

Continuum/Cycle/Journey of

Cognitive Interpretation:
- Cause
- Mismatch of symptoms
- Perceived Personal Risk
- Social Messages
- Medical Messages
- Previous Experience

Cognitive Coping:
- Time-line
- Self-Treatments
- Relationship with pain/illness
- Attempts at Normalisation

Cognitive Trigger:
- Symptoms exceed coping strategies

Cognitive Response:
- Seeking Permission
- Social Messages
- Involving Others

Symptom Awareness:
- Prodromal Symptoms →
- Intense Symptom

↑
Stimulus: Seeking ←Understanding→
↓

↑
Covert Action: ←Seeking Sense of Self→
↓

(Re)-assessment: Seeking Meaning
↓

←Non-Health threat

↑
Health threat →
↓

↑
Overt Action: ← Seeking→ Validation:
↓

Decision made to go to hospital.

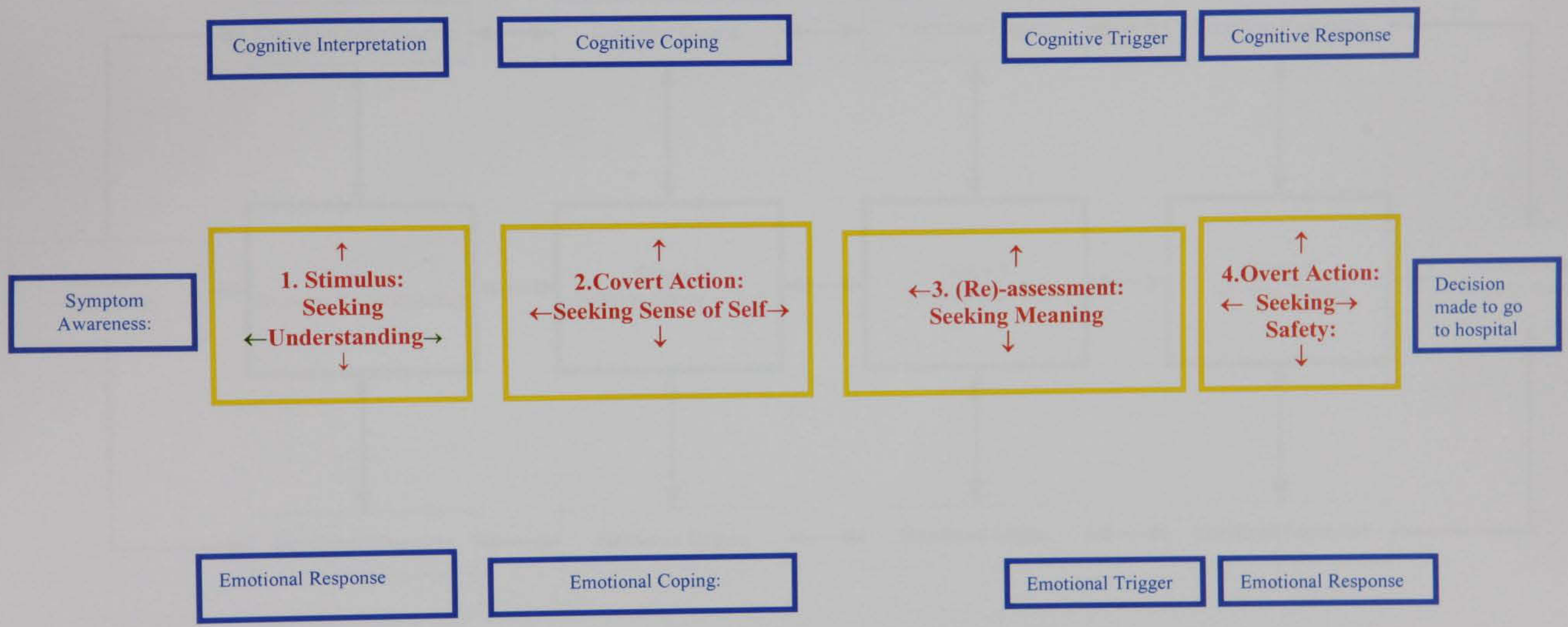
Emotional Response:
- Curiosity
- Irritation
- Concern

Emotional Coping:
- Avoidance
- Denial
- Anxiety
- Not wanting to make a fuss
- Control

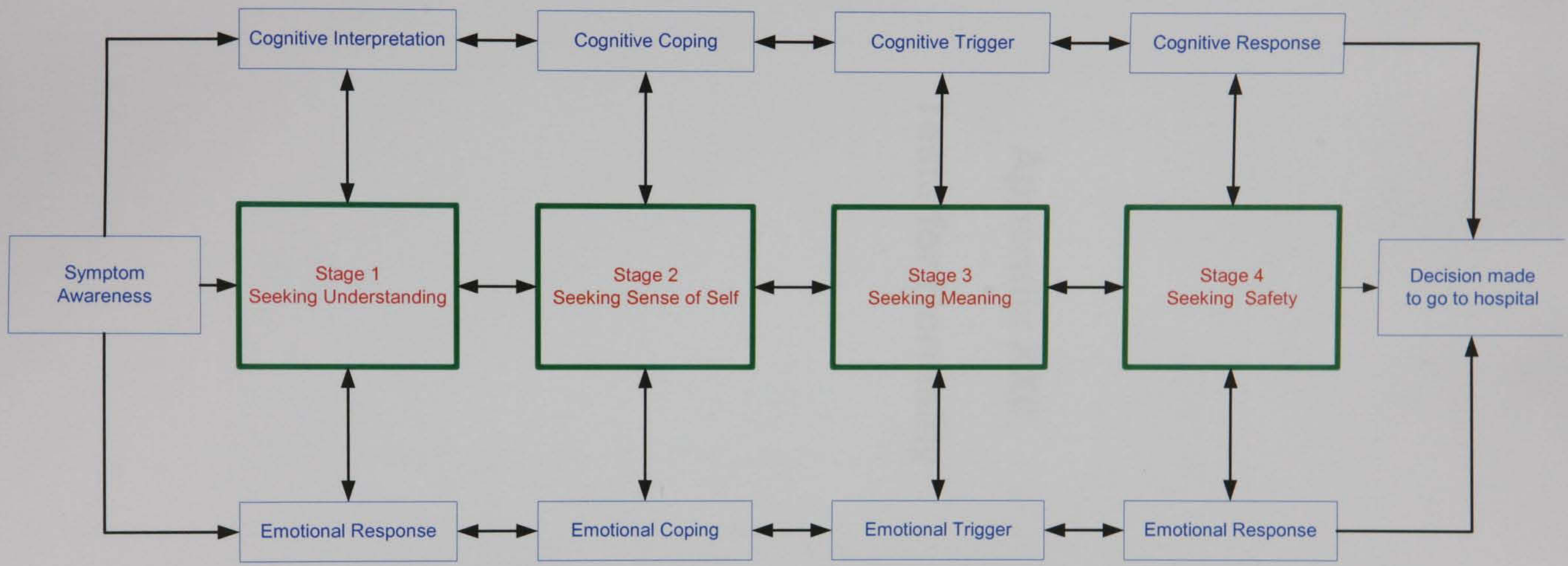
Emotional Trigger:
- Fear
- Feeling Vulnerable

Emotional Response:
- Needing others
- Needing Safety

The Woman's Heart Model



The Woman's Heart
Self Regulation Model of Behaviour

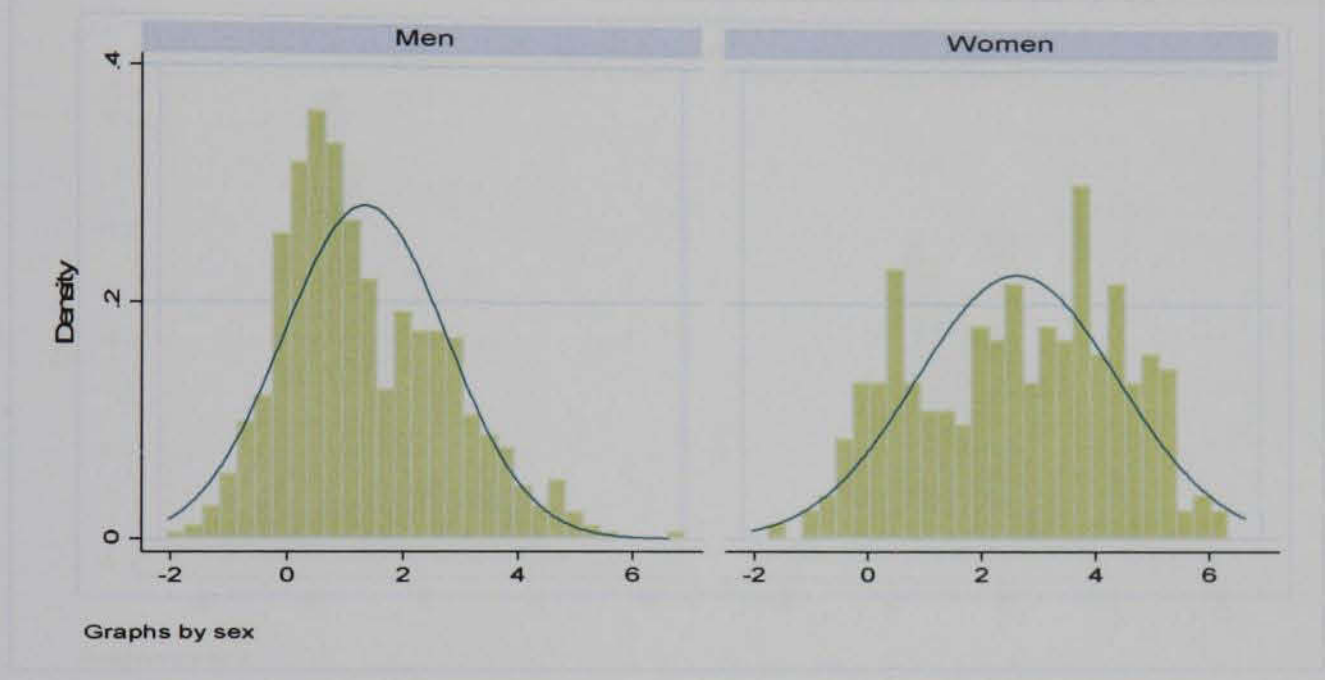


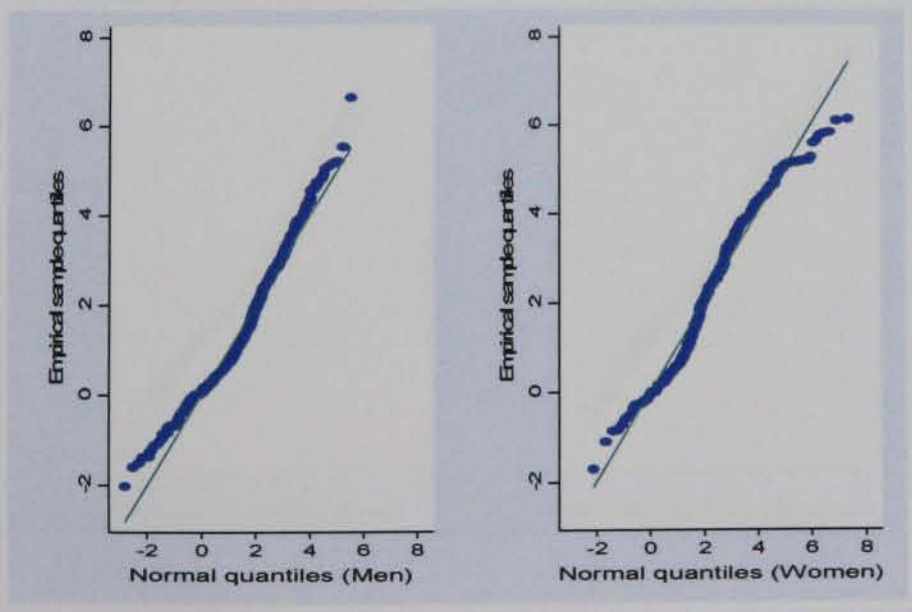
Appendix XXII

Tests for Normality

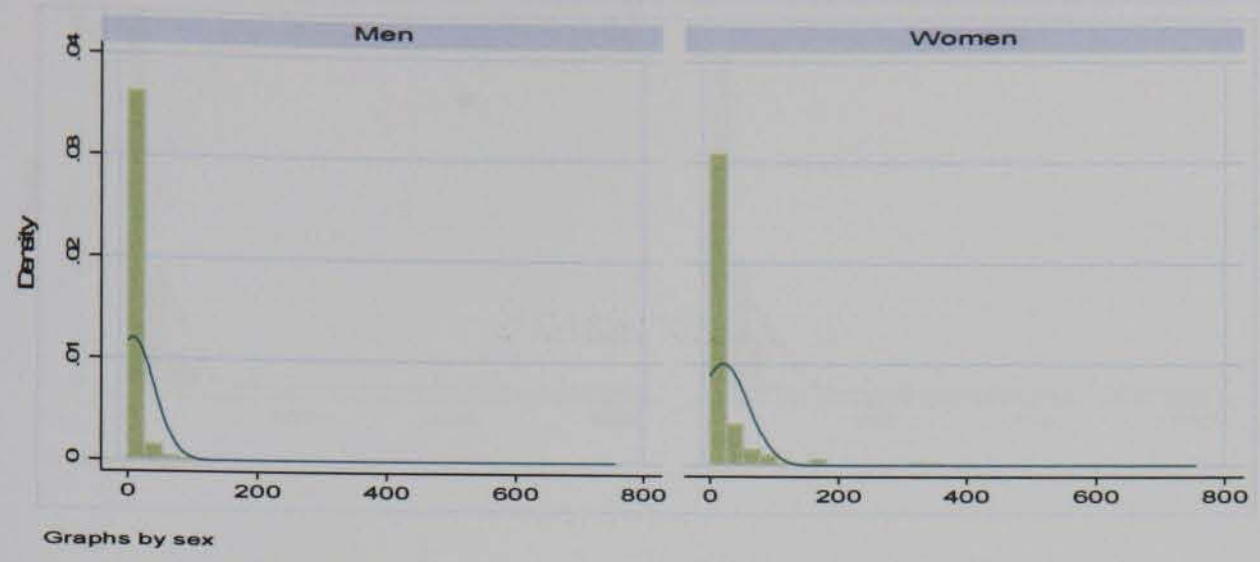
Q10Q8hours (Initial symptom onset to A&E)

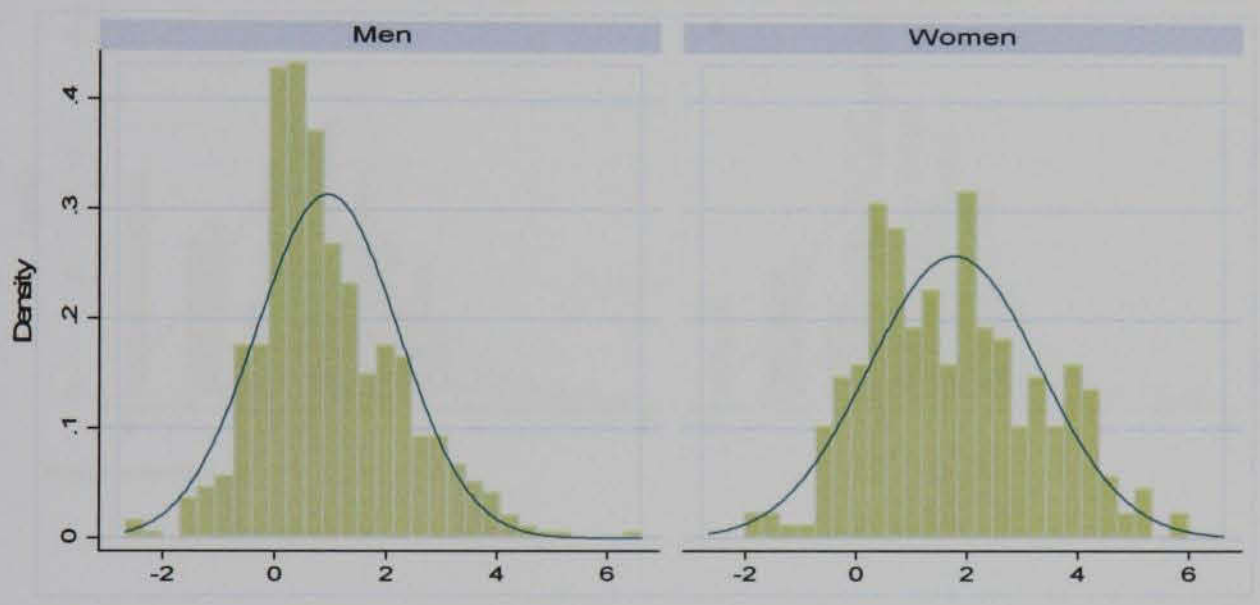


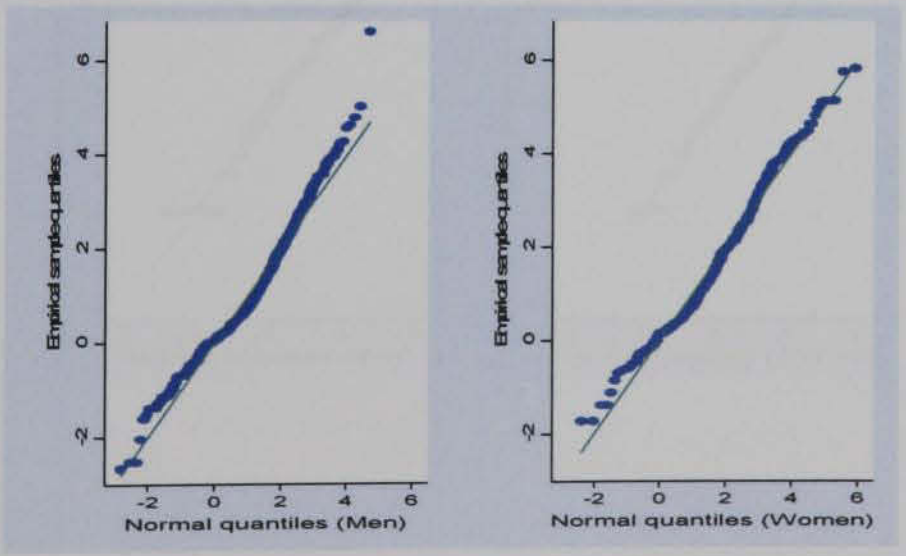




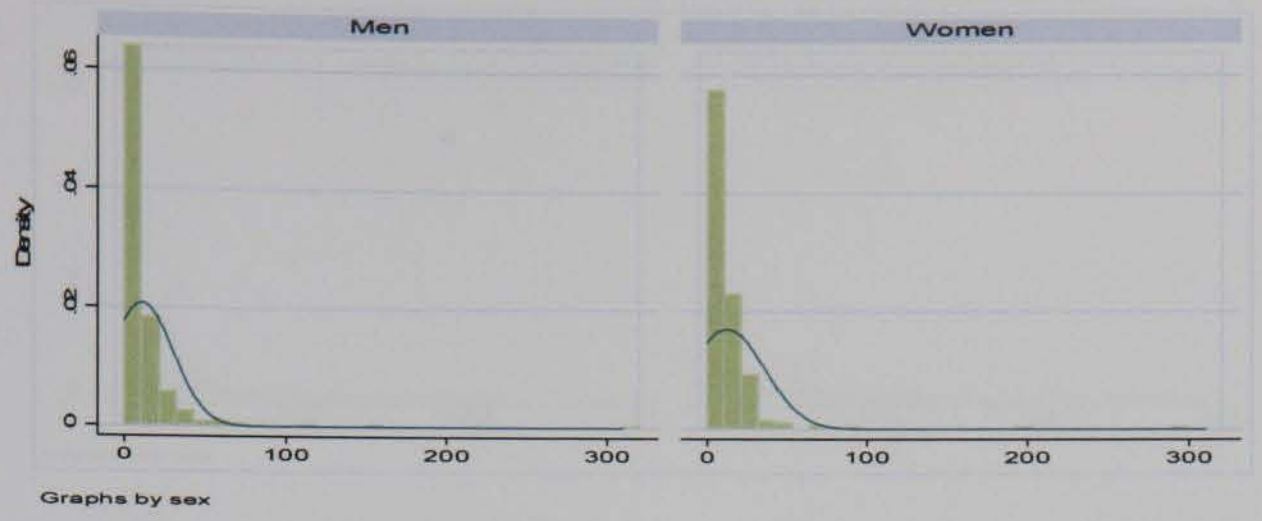
Q10Q89hours (Intense Symptom onset to A&E)

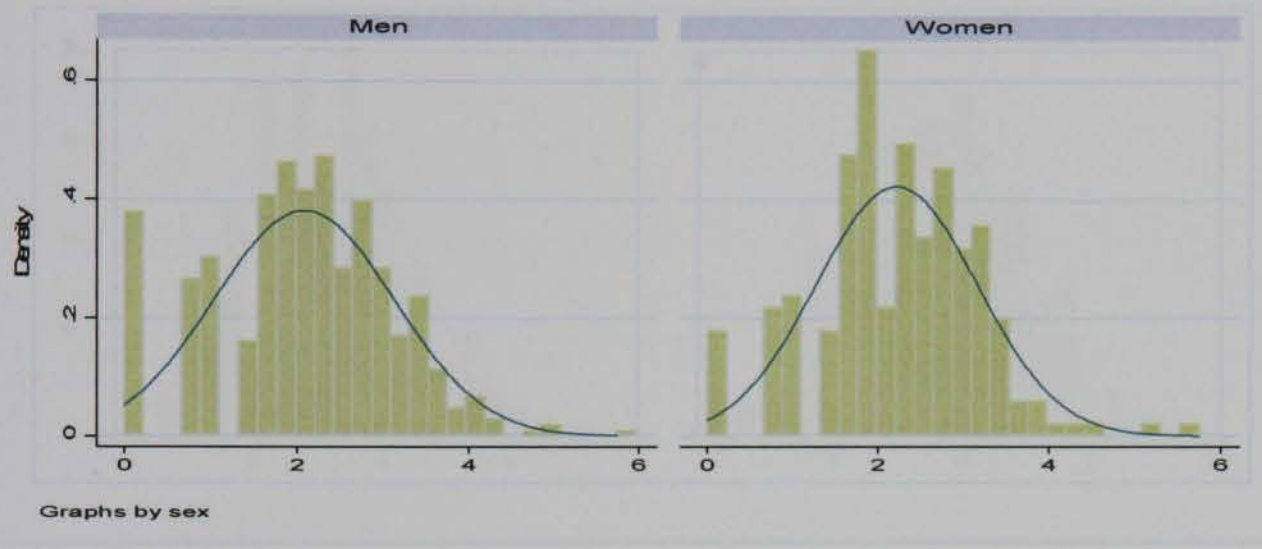


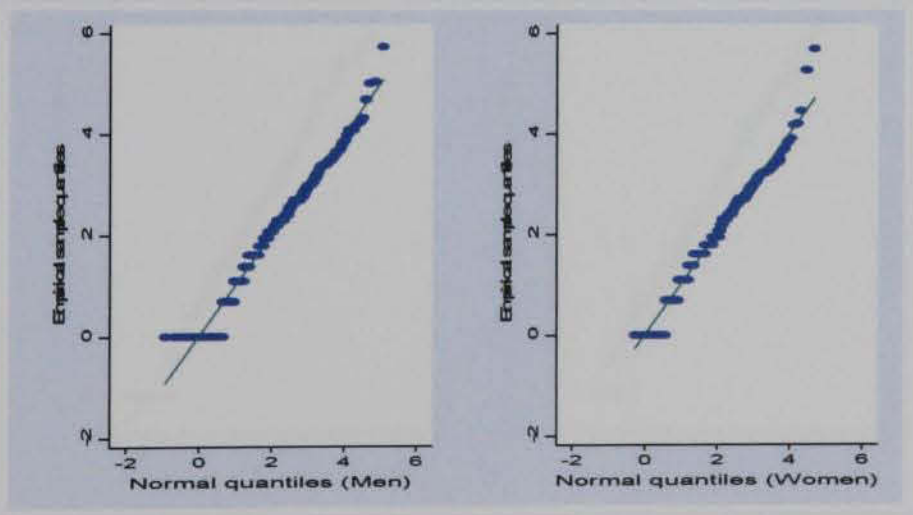




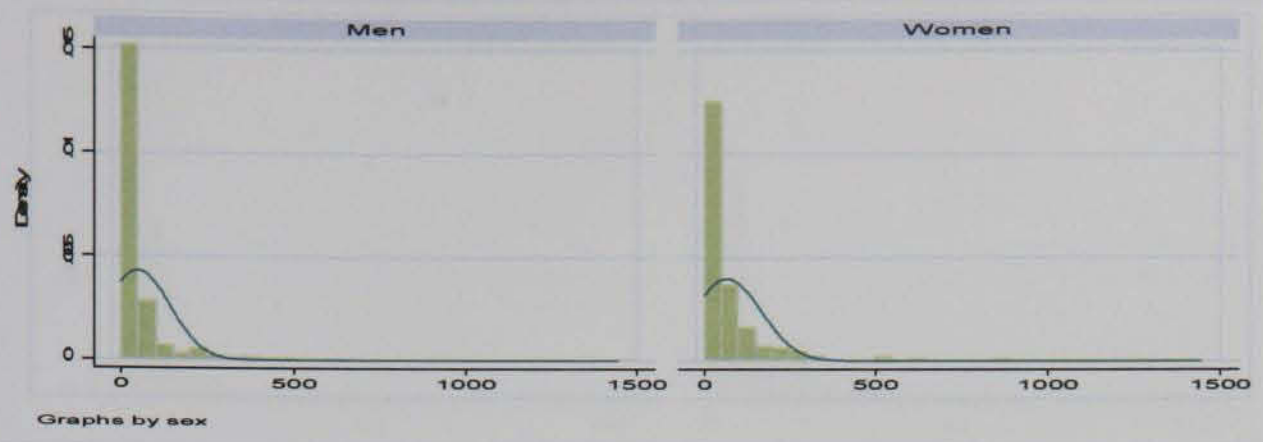
11Q10minutes (Door to Triage)

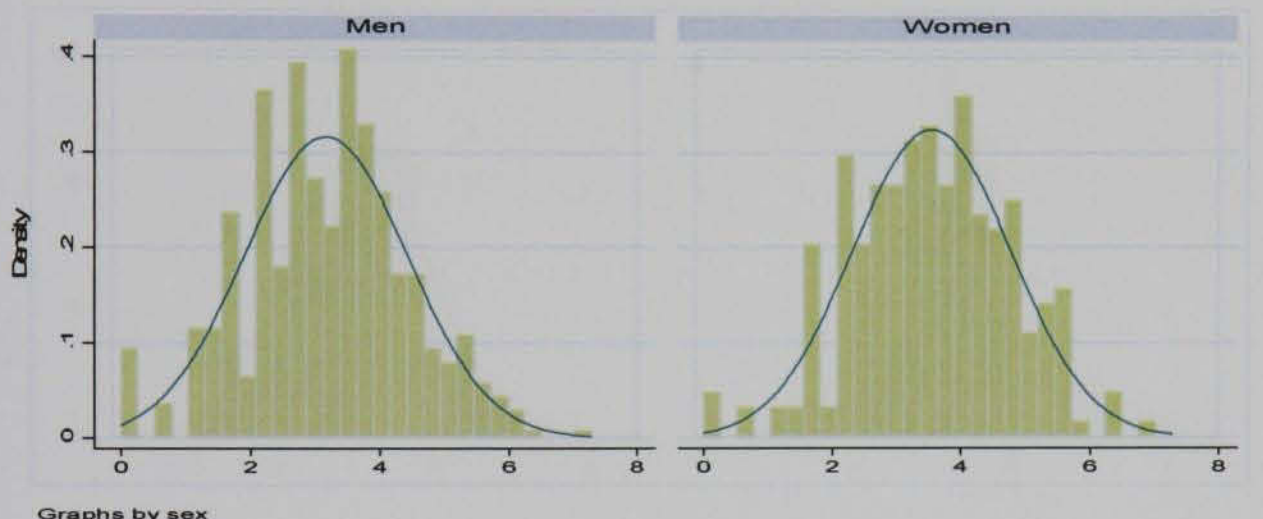


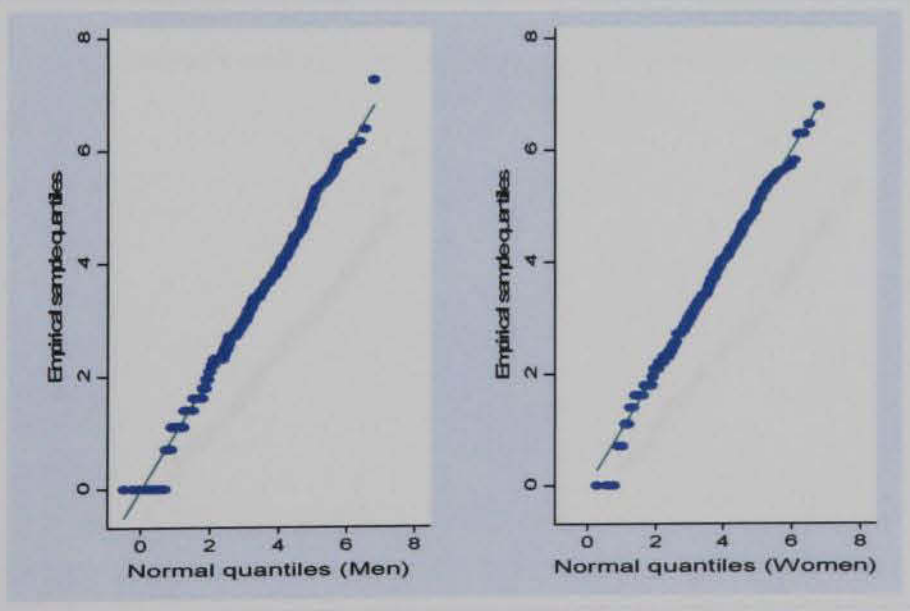




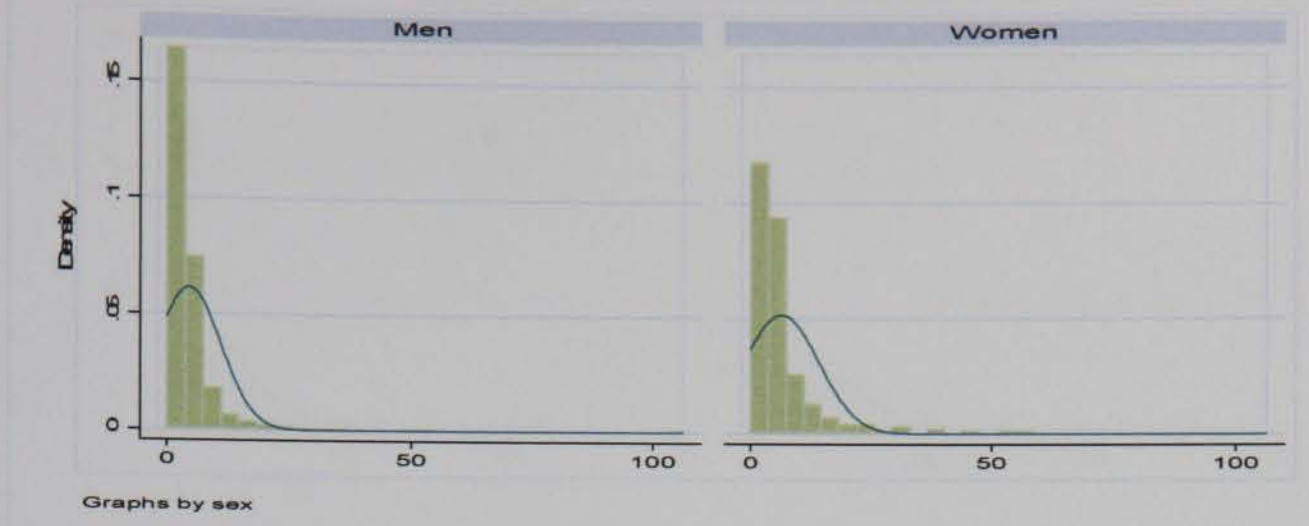
Q12Q10minutes (Door to 1st medical assessment)

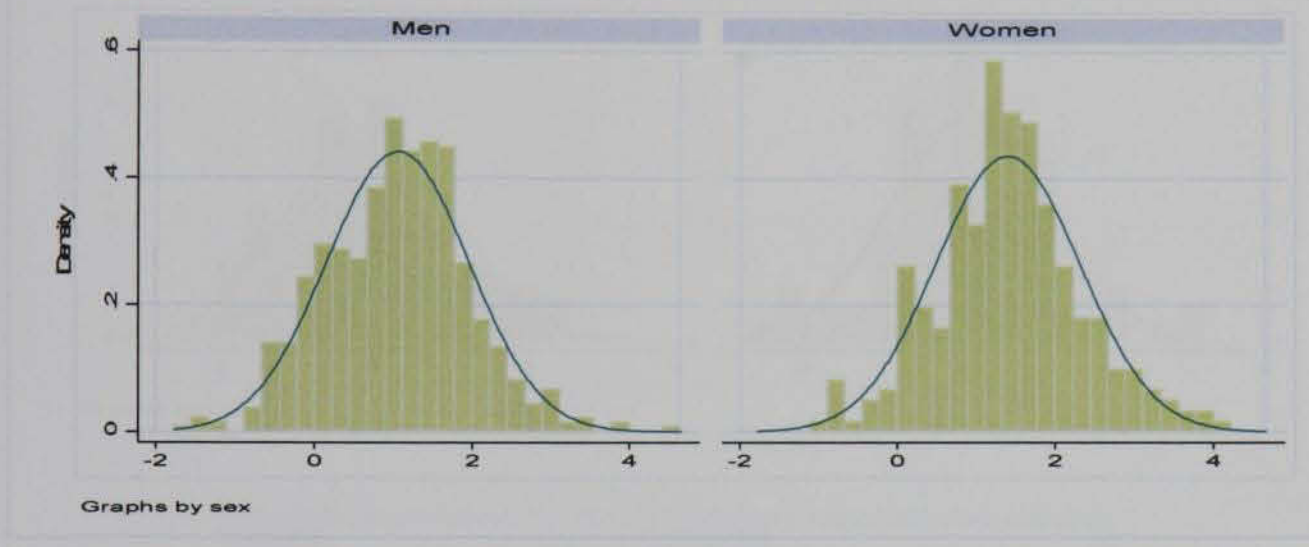


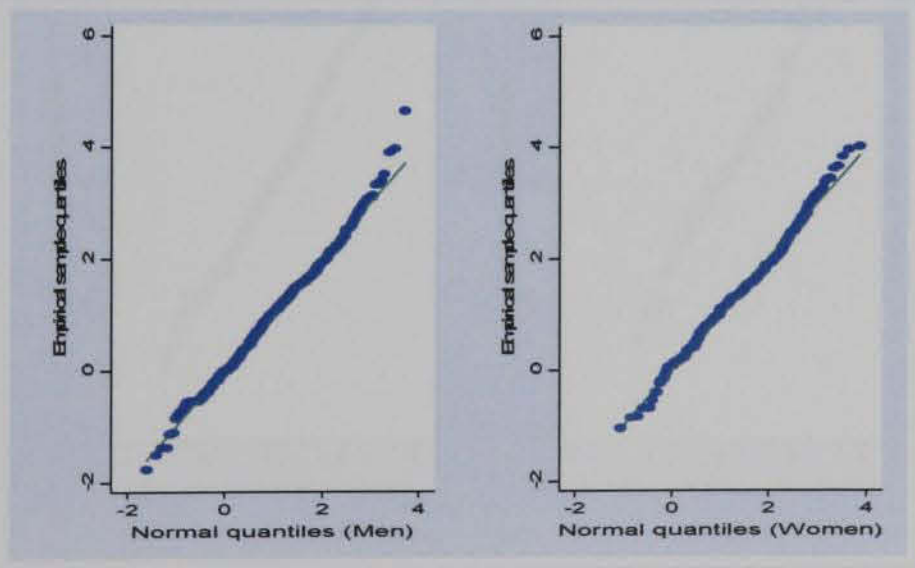




Q13Q10hours (Door to CCU)







Q20Q10hours (Door to needle A&E)



