A Study of Community Pharmacy Practice

1. Pharmacists' Work
Patterns

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The utilisation of pharmacists' time was examined in a work study of community pharmacists. Pharmacists' activities were analysed using an observer work measurement technique to gather data on the range and frequency of their activities. A total of 4000 observations were made of 47 pharmacists working in 40 community pharmacies in Dublin city and county in the Republic of Ireland.

The results of the study showed that pharmacists spent, on average, one third each of their time on professional, business and non-productive activities. While no statistical differences were found between pharmacists when classified by age, sex or job-title, there were significant differences between young and middle-aged proprietor-pharmacists in their work patterns. Young proprietor-pharmacists spent a higher proportion of their time on professional activities and less on non-productive work than middle-aged proprietor-pharmacists.

Key words: Age; Ireland; Job analysis; Pharmacies, community; Pharmacists, community; Sex; Workload.

Introduction

Analysis of pharmacists' time provides information with which to evaluate their work in both professional and economic terms. The benefit to the public of pharmacists' services, although ultimately related to the effectiveness and appropriateness of those services, is dependent on the proportion of time that is devoted to pharmaceutical tasks. The extent of their professional practice may also be considered in economic terms as the utilisation of an expensive health care personnel resource.

A number of hospital-based studies have employed observer work measurement techniques to analyse pharmacists' activities. The results of these studies have highlighted areas where greater efficiency might be achieved in the use of pharmacists' time through changes in work practices [1] or in staffing arrangements [2]. One study in a hospital pharmacy [3] found that a higher proportion of professional activities occurred when pharmacists were aided by at least the same number of technicians as pharmacists than when staffing patterns included more pharmacists than technicians. In contrast, Dickson and Rodowskas [4] found that in community pharmacies, as the number of non-pharmacists increased, pharmacists spent more, not less, time on pharma-

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ceutical activities classified as those a nonpharmacists may perform.

Self-reporting by pharmacists has also been used to determine their activities [5] and to characterise the work of pharmacists in differ-

ent branches of pharmacy [6].

In the Republic of Ireland, community pharmacies are involved not only in health care but many also engage in ancillary trading. The extent to which community pharmacists involve themselves in non-pharmaceutical tasks determines their present work patterns and the time available for their professional activities. The present study was undertaken to provide information on the range of activities performed by Irish community pharmacists and the time devoted to each activity. The study also proposed to investigate whether pharmacists' work patterns varied according to the day of the week, the part of the day or according to characteristics of the pharmacists or the pharmacy.

Methods

Sample

The study was conducted by observation in a random sample of 40 community pharmacies in Dublin county (an area including the city of Dublin, its suburbs and surrounding countryside) during the months of January to March, 1985.

The sampling frame used was a list of the 317 pharmacies in Dublin in November 1984, compiled by the Pharmaceutical Society of Ireland. Initially, 42 pharmacies were selected using random number tables, without replacement. A letter sent to each proprietor explaining the purpose of the study was followed up by a telephone call in which greater details were given and their cooperation sought. A response rate of 65% was obtained and a further 26 pharmacies were then randomly chosen and contacted in a similar manner. As 40 pharmacies eventually participated in the study, the total response rate for the 68 pharmacies contacted was 59%.

One day was spent in each of pharmacies during which four or five hours were devoted to the work study and about two hours to a study of non-prescription, over-the-counter (OTC), medicine sales. The number of prescriptions dispensed was recorded for the duration of both studies.

Four study days (excluding Sundays) were selected systematically for each week of the study so that no week contained the same combination of days. Each day of the week was rep-

resented six times with a further two days for Thursdays and for Fridays, days on which some pharmacies open for late nights.

The study day was divided into six parts: four two-hour periods in the early and late morning and the early and late afternoon, a one-hour period at lunchtime and a three-hour late-night period. For pharmacies which were not open for late-nights, work study observation hours were one period in the morning and one period in the afternoon. The lunchtime period was included if the pharmacy was open at that time. For pharmacies which were open for late-nights, work study observation hours were either the lunchtime and late-night periods or one period either in the morning or the afternoon and the late-night period. Six combinations of work study and OTC study hours were devised and allocated systematically to the study days. The day to be spent in each pharmacy was allocated systematically in consultation with the pharmacy proprietor.

The studies were pre-tested in a single pharmacy for a period of one day and modifications were made to the study methods where nec-

essary.

Work measurement

Pharmacists' activites were recorded using work sampling, a work study method based on observations made of an individual at random intervals [7]. The individual's activity at the time of observation is noted and classified into one of a number of mutually exclusive categories. The proportion of observations in any category reflects the proportion of time spent in that category. One possible problem with this method of work measurement is that the observer's presence may influence the work pattern of the observed person. However, an Australian study [8] of comparative methods of assessing pharmacists' counselling behaviour concluded that the influence of direct observation did not appear to be great.

An equal number of observations (n = 100) was made in each of the forty pharmacies with the number of observations per hour varying according to the number of hours of work sampling in the pharmacy: 25 observations an hour were made when the number of work study hours was four while 20 observations were recorded when the number of hours was five. Observations were made at random intervals, the times being selected in advance of the stu-

dy using random number tables.

Only one pharmacists was observed at any time: if two or more pharmacists were working together, the proprietor or manager pharma-

cists was observed. At each observation time, the pharmacist's activity was recorded and classified into one of 27 categories adapted from a study by Dickson and Rodowskas [4]. A short description of each category is given in Appendix A. All observations were made by one of the authors, a pharmacist with experience in community pharmacy.

The pharmacists whose activities were observed were classified by three variables: sex, age (<45, 45-65, and >65) and job title (proprietor, employee-manager and other). Staff wholly or mainly involved in dispensing were classified as either a pharmacist working alone

or a pharmacist assisted by others.

Data on the age distribution of pharmacistproprietors in Dublin were obtained from a manpower study on the pharmaceutical profession in Ireland [9].

Data analysis

In the analysis of the data, some activity categories were combined. The categories of Clerical (Dispensary), Clerical (Third-Party) and Labelling were combined as the clerical work involved in dispensing. The categories of Compounding, Drug Preparation, and Drug Selection and Transfer were combined as the manipulative tasks involved in dispensing. The 27 categories were also combined into three activity groups representing professional, business

and non-productive work.

The total proportion of pharmacists' time spent in each activity category, and when classified by day of the week, by the part of the day, and by computer use, was calculated as the proportion of total observations made per pharmacy which were devoted to each activity. The mean proportion of time spent in each activity was then calculated as the mean value for the 40 pharmacies. The proportion of time spent in each activity was also classified by pharmacist variables. A total of 47 pharmacists were observed as in some cases the pharmacist on duty changed from one period of observation to another. When classified by pharmacist variables, the proportions were based on the proportions of total observations per pharmacist in each pharmacy: mean values were then calculated for the 47 pharmacists observed. This method was used because the observations were not independent (as more than one observation was made on each individual) and because the number of observations made differed between the days of the week, the parts of the day and between pharmacists.

In some of the activity categories the values were found not to be normally distributed. Be- $\chi^2 = 2.022$; df = 2; p > 0.05.

cause of this, an indication of the variation in the data for the 27 activity categories is given by presenting, along with the mean, the median value and the interquartile range (the difference between the 75th and 25th percentile values).

Non-parametric tests were used in the statistical analysis: the Mann-Whitney U test, the Kruskal-Wallis analysis of variance and Spearman's rank correlation procedure. Due to large sample sizes, results of the Mann-Whitney U test are reported as Z approximations and the results of the Kruskal-Wallis analysis of variance as χ^2 values. Where a significant difference between groups was found using the analysis of variance, the data were subjected to Dunn's nonparametric multiple comparison test in order to determine which groups differed from which other groups. A significance level of 0.05 was used for all tests.

Results

Forty pharmacies participated in the study, representing 12.6% of pharmacies in Dublin. All the pharmacies were independent, pharmacist-owned businesses. The mean number of staff employed in the pharmacies was 5.1 [10]. In order to determine whether the participating pharmacies were representative of the population of pharmacies in Dublin, the age distribution of the pharmacist-proprietors in the study was compared with that of the 260 pharmacist-proprietors of known age in Dublin in September 1983 (Table 1); no significant difference was found between them.

A total of 4,000 observations were made of 47 pharmacists; there were 90 periods of observation totalling 176 hours. Pharmacists' professional activities were found to occupy a mean of 33.1% of their time, while business activities occupied 35.9% and non-productive activities, 31.0% of their time (Table 2). The mean proportion of time spent on the clerical and labelling tasks involved in dispensing was 15.4% and on

Table 1. Percent of pharmacist-proprietors in each age group in the survey and in Dublin

Age	Survey	Dublina	
	%	%	
< 45	27	18	
45-65	62	66	
> 65	11	16	
Total	100	100	

a Data obtained from reference [9]

Table 2. Percentage of time spent by pharmacists in each activity category

Category	Mean	Median	Interquartile range	
	(%)	(%)	(%)	
Clerical (Dispen-				
sary)	7.5	6.0	7.5	
Clerical (Third-				
Party)	4.1	2.0	6.8	
Communication				
(Patient)	5.8	5.5	5.0	
Communication				
(Pharmacist)	1.7	1.0	3.0	
Communication				
(Physician)	0.3	0.0	0.0	
Compounding	0.2	0.0	0.0	
Drug Prepara-				
tion	3.6	3.0	4.0	
Drug Selection				
and Transfer	2.5	3.0	3.8	
Information				
(General)	1.5	0.0	1.0	
Information				
(Specific)	1.2	1.0	2.0	
Labelling	3.8	3.0	4.8	
Prescription Re-				
view	1.1	1.0	2.0	
Professional	33.1	33.0	19.8	
Cashier	3.3	3.0	3.5	
Clerical (Office)	5.0	2.5	8.3	
Communication				
(General)	8.4	7.0	5.8	
Managerial	1.9	1.5	3.0	
Pricing	3.5	3.0	4.0	
Product Pack-				
aging	2.1	2.0	2.0	
Product Selec-				
tion and Trans-				
fer	0.8	0.5	1.0	
Stock Control	8.1	6.5	8.0	
Other	2.9	2.0	3.0	
Business	35.9	34.0	13.3	
Absent	8.6	1.5	11.0	
Clean-Up	3.3	3.0	2.0	
Idle	14.0	12.0	11.8	
Travel	3.4	3.0	3.0	
Unobservable	2.9	1.0	3.0	
Upkeep	0.4	0.0	0.0	
Non-productive	31.0	31.0	17.0	

the manipulative aspects, 6.3%. Pharmacists were engaged in health-related communication with patients, physicians and other phar-

macists for a total of 7.8% of their time while they spent 8.4% of their time in communication of a general nature. They spent 1.2% of their time acquiring information to answer a specific question and a further 1.5% on obtaining general information.

Time spent idle, including breaks, accounted for a mean of 14.0% of pharmacists' time while absence from the pharmacy represented 8.6% of their time. However, the median value for absence was much lower, at 1.5%.

The rate of prescription dispensing had a mean value of 7.7 items an hour (range: 2.3-20.7) and was not found to be correlated with the proportion of time spent on either the clerical and labelling (Spearman's $r_s = 0.16$) or manipulative tasks (Spearman's $r_s = 0.15$) involved in dispensing.

Pharmacists dispensed on their own in 37 periods of work study observation and were assisted in 53 periods. There was a significant difference between the two groups in the time they spent on manipulative dispensing tasks (Mann Whitney U test, Z = -2.549, p < 0.02): the mean values were 8.0% for those who dispensed alone and 5.1% for those who were assisted. There was little difference between them however in the time spent on the clerical and labelling tasks involved in dispensing (16.4% and 15.2% respectively). There was a significant difference between the two groups in the hourly dispensing rate (Mann-Whitney U test, Z = -2.262, p < 0.01). The mean hourly dispensing rates were 5.9 for those who dispensed alone and 8.6 for those who were assisted.

The times spent on Clerical-Dispensary, Labelling and Pricing were compared for pharmacists working in pharmacies which had computerised dispensing (n = 12) and those which had not (n = 28). The results showed a significant difference between them in the time spent on Labelling (Mann-Whitney U Z=-1.984, p<0.05) and Pricing (Mann-Whitney U test, Z = -2.331, p < 0.02). The mean proportions of time spent by pharmacists with computers on Labelling and Pricing were 2.3% and 2.8% respectively while the values for pharmacists working without a computer were 4.5% and 3.8% respectively. The proportions of time spent on Clerical (Dispensary) tasks were similar, at 8.5% for pharmacists working with a computer and 7.0% for those without. A significant difference was found between the two groups in their dispensing rates (Mann-Whitney U test, Z = -3.971, p < 0.001): the mean hourly dispensing rates were 11.8 for pharmacists with computers and 6.0 for those without.

Table 3. Mean percentage of time spent in combined activity groups classified by the day of the week

Activity group	Monday n=6 (%)	Tuesday n=6 (%)	Wednesday n=6 (%)	Thursday n=8 (%)	Friday n=8 (%)	Saturday n=6 (%)
Professional	32.7	38.2	35.5	25.8	40.8	25.8
Business	35.3	31.5	32.5	36.6	35.6	43.8
Non-productive	32.0	30.3	32.0	37.6	23.6	30.3

Table 4. Mean percentage of time spent in combined activity groups classified by the part of the day

Activity group	Early	Late	Lunchtime	Early	Late	Late night
	n=18 (%)	n=18 (%)	n=12 (%)	n=18 (%)	n=18 (%)	n=6 (%)
Professional*	26.1	31.4	34.8	44.4	32.0	31.0
Business	31.6	39.8	29.8	35.3	37.6	40.8
Non-produc- tive**	42.3	28.8	35.4	20.3	30.3	28.2

^{*} Kruskal-Wallis analysis of variance. $\chi^2 = 11.914$, df = 5, p < 0.05.

Table 5. Mean hourly rate of dispensing classified by the day of the week and the part of the day

Day	Mean hourly dispensing rate	Part of the day*	Mean hourly dispensing rate
Monday	10.8	Early morning	5.8
Tuesday	6.9	Late morning	9.9
Wednesday	8.2	Lunchtime	5.1
Thursday	8.1	Early afternoon	7.2
Friday	6.9	Late afternoon	8.3
Saturday	5.6	Late night	8.5

^{*} Kruskal-Wallis analysis of variance, $\chi^2 = 15.557$, df = 5, p < 0.01.

When classified by the day of the week, variations were found in the proportions of time spent on the three main activity groups: professional, business and non-productive (Table 3). Pharmacists spent more time on professional activities on Fridays and less on Thursdays and Saturdays than on other days of the week. They spent more time on business activities on Saturdays than on other days, while the level of nonproductive activity was lowest on Fridays.

When classified by the part of the day, the results of the Kruskal-Wallis analysis of variance

showed that there were significant differences with respect to the time spent on professional activities and non-productive work (Table 4). Dunn's multiple comparison test revealed that a significantly greater proportion of pharmacists' time was spent on professional activities early in the afternoon than in the early morning while the converse was true of non-productive activities during the same periods.

Variations were found in the mean dispensing rate when classified by the day of the week, the rate on Mondays (10.8) being almost twice that on Saturdays (5.6) (Table 5). Significant

^{**} Kruskal-Wallis analysis of variance. $\chi^2 = 11.750$, df = 5, p < 0.05.

Table 6. Mean percentage of time spent in combined activity groups classified by age, sex, job-title and by age of proprietor-pharmacist

Demographic variable	Acitivity group				
	Professional (%)	Business (%)	Non-productive (%)		
Age: $<45 (N=15)$	35.8	34.7	29.5		
>45 (N=32)	31.1	35.2	33.7		
Sex: Male $(N=33)$	34.4	33.7	31.9		
Female $(N=14)$	28.5	38.0	33.5		
Job-Title: Proprietor (N=34)	31.8	35.5	32.7		
Manager (N=5)	26.5	37.7	35.8		
Age of Proprietor-pharmacist: <45 (N = 12)	39.2*	35.0	25.8**		
45-65 (N = 20)	25.5*	36.5	38.1**		

* Mann-Whitney U test, Z = -2.687, p < 0.01.

** Mann-Whitney U test, Z = -2.083, p < 0.05.

differences in the dispensing rates were found when analysed according to the part of the day (p < 0.01).

An analysis of the activities of pharmacists using demographic variables is given in Table 6, revealing no significant differences when age, sex and job title were examined. However, for the two largest groups of pharmacists observed, pharmacist-proprietors aged under 45 and between 45 and 65, significant differences were found between them in the proportion of time spent on professional activities (p<0.01) and on non-productive activities (p<0.05). Young pharmacist-proprietors spent a higher proportion of their time on professional activities and less on non-productive work than middle-aged pharmacist-proprietors. The mean hourly dispensing rates in pharmacies managed by young and middle-aged proprietors were similar, at 8.6 and 7.9 respectively. The activities of groups of pharmacists other than proprietors were not examined as the numbers in some groups were too small.

Discussion

No significant difference was found between the sample of pharmacies and the population of pharmacies in Dublin on the basis of the age distribution of the pharmacist-proprietors. Although the pharmacist-proprietors in the study were slightly younger than those in the population, there is no reason to suggest that they were very different to the population. Whether or not the sample differed from the population in other variables could not be established because of lack of reliable data on pharmacies in Ireland.

Pharmacists' work patterns

Pharmacists' work was found to be almost evenly divided between professional, business and non-productive activities. Thus only a third of their time on average was devoted to the pharmaceutical tasks for which they are qualified. This would appear to represent an underutilisation of their professional skills and of a health-care personnel resource.

The clerical workload involved in dispensing did not correlate with the volume of prescriptions dispensed, a result which has also been reported in a work sampling study of community pharmacists' activities in the US [11]. Only the time spent on manipulative tasks was found to vary under different dispensary staffing arrangements. A possible explanation for these results may lie in the varying inputs made by pharmacists to the dispensing of prescriptions. While some pharmacists were observed to be almost wholly involved in prescription dispensing, some were found to delegate much of the task to other staff. In other cases it was noticed that the work was divided into clerical and manipulative tasks which were undertaken by different staff members. Another work sampling study of prescription department personnel in the US [12] did show a relationship between the time devoted to prescription activities and prescription volume. However the study included the contribution from non-pharmacists to dispensing activities.

The time devoted by pharmacists to the additional clerical tasks for third-party claims (4.1%) represents just over half of the time they devoted to the record-keeping clerical tasks re-

quired for all prescriptions and would suggest that third-party prescription processing generates a substantial increase in professional clerical workload.

Pharmacists working with a computer were found to devote less time to labelling and pricing tasks while dispensing a greater number of prescriptions than those working without a computer. In computer-assisted dispensing, both prices and labels are generated either automatically or with little additional work on the part of the dispenser. One would expect therefore that computer use would decrease the amount of time spent on these tasks. In a study in the US of computer use [13], computer-users reported spending a similar proportion of their time on prescription processing as non-users, while having a higher, though not significantly higher, dispensing rate. However, because no correlation was found in the present study between the time spent on dispensing tasks and dispensing workload, no definite conclusion can be reached about the effect of computers on the level of pharmacists' dispensing activities. Since labelling and pricing activities are only part of the tasks involved in dispensing, the overall effect on prescription processing times may not be significant.

Patient counselling accounted for the majority of pharmacists' health-related communications. The mean proportion of time devoted to patient communication (5.8%) was slightly higher than that found by Dickson and Rodowskas (5.1%) [11] and by Boyd et al. (4.8%) [14], both of which were also work sampling studies in community practice. The time pharmacists devoted to patient communication is equivalent to 3.5 minutes per hour on average. When compared with other professional activities, pharmacists spent more time on the clerical and manipulative tasks involved in dispensing than they did on counselling patients on all health matters, including prescription drugs. They also devoted more time to business activities such as stock control than to advising patients on medicines.

The level of health-related communication with physicians was found to be extremely low (0.3%) and was based on observations from only two pharmacists. Higher values have been reported in the US (2.5%) [11] and Canada (2.7%)[14].

The acquisition of information also occupied very little of pharmacists' time (2.7%). As this category included not only medical and pharmaceutical information but also the acquisition of non-professional information, it is evident that pharmacists devoted very little time at business. Another possibility is that young

work, on average, to reading professional texts and journals in order to keep abreast of current developments and to update their knowledge. Other studies on community pharmacists also report a low level of information acquisition (4.1% [11] and 0.3% [14]). Through continuing education courses some pharmacists undoubtedly devote more time to this activity outside of working hours. Any assessment of the low level found for this activity must focus on the level of knowledge held by pharmacists and the application of that knowledge in practice.

The analysis of the results when classified by the part of the day indicated an inverse relatonship between the proportion of time devoted to professional activities and the proportion of time spent in non-productive work. The level of professional activities was low, on average, in the early morning period when the prescription workload was low. The level of nonproductive activity was high, mainly due to absence from the pharmacy. During the early afternoon, the level of professional activities was high and the dispensing workload was higher than in the early morning. During the same period, the proportion of time spent in non-productive work was low. The time spent by pharmacists in business activities remained relatively constant throughout the day. These results suggest that the pharmaceutical workload may influence the distribution of pharmacists' time between professional and non-productive work without affecting the time spent on business work activities.

No significant differences were found between pharmacists when classified by age, sex or job title, in the time devoted to the three combined activity groups. In a self-reporting study of community pharmacists in Quebec [15], there were no substantial differences found between men and woman in the proportions of work time reported by them as allocated to various professional duties, though among small pharmacy owners, women reported counselling patients on new drug therapy more often than men. It would appear that there are few real differences between the work patterns of male and female community pharmacists.

Significant differences were found between young and middle-aged proprietors in the time devoted to professional activities and to nonproductive work. Professional activities accounted for a higher proportion of young, rather than middle-aged, proprietors' time. One possible explanation is that this finding is related to the size of the pharmacy's professional

proprietors consciously devote more time to professional activities than older proprietors. All but one of the young proprietors were university graduates while all but one of the middle-aged proprietors had qualified by apprenticeship and diploma before the degree was introduced. Whether the age or the mode of qualification of the proprietor is the determining factor is unclear, as both variables are interlinked. A difference due to the mode of qualification is likely to occur as the experience gained as an apprentice may not be affected by subsequent attendance at lectures, whereas the degree course, of longer duration than the lecture course for apprentices, may expose graduates to a professional discipline before they enter community practice [16]. However the work environment of both groups is similarly structured and both work within the same legal and professional constraints. Any assessment of the effect of the degree course on the proportion of time devoted by pharmacists to their professional activities may have to wait until graduate proprietors become older, in order to control for the possible confounding effect of age. Another possible explanation for the result is that it may be related to differences between young and middle-aged proprietors in their professional and business role orientations [17].

The higher proportion of time accounted for by non-productive work among middle-aged proprietors may be related to the fact that all the branch pharmacies were owned by proprietors (n = 6) of that age group. Management of more than one pharmacy is likely to entail greater absence from one or other of the pharmacies by the owner than would be the case for proprietors of only one pharmacy.

Business activities

Pharmacists were found to devote 35.9% of their time on average to business activities, of which the largest categories were General Communication (8.4%) and Stock Control (8.1%). The proportion of time spent on general communication was slightly greater than the time devoted to all health-related communications. Although Dickson and Rodowskas found that general communication (similarly defined) took only 1.4% of pharmacists' time [11], higher values have also been reported (11.8% in Canada [14] and 11.2% in the US [12]). The proportion of time devoted to this activity, which was higher than that devoted to many professional work categories, probably reflects the need for pharmacists, particularly proprietor-pharmacists, to be visible to their in work practices can be determined.

customers and to build up a relationship with them.

Non-productive work

Non-productive work occupied 31.0% of pharmacists' time on average, of which almost three-quarters was accounted for by idleness and absence. Comparison with other work sampling studies of community pharmacists, although limited by possible differences in definition, reveals that the proportion of time classified as non-productive was higher in the present study than reported elsewhere. Given values, or values estimated using the same or near-similar categories as those in the present study, ranged from 15.2% [12] to 23.4% [11].

The proportion of time spent idle possible reflects pharmacists' legal obligations to be present in the pharmacy even though there may be no work to be done and the fact that the professional workload is not constant throughout the day but dependent on such factors as physicians' visiting hours and customers' shopping habits. For the two morning and afternoon periods of observation, the proportion of idle time is equivalent to 60 minutes (counting each of the four periods as two hours). If 30-40 minutes are allocated to coffee-breaks, then the remaining time is not unreasonable, though it is time that could be redistributed to professional activities.

Absence from the pharmacy accounted for 8.6% of pharmacists' time, but the lower median value indicates that many pharmacists were not appreciably absent from the pharmacy. Although the reasons for absence were not recorded, some absence may have been productive if related to the pharmacist's professional or business activities.

Conclusion

In conclusion, the work pattern of pharmacists observed in this study varied during the course of the day and to a lesser extent during the course of the week. Within the sub-group of proprietor-pharmacists, the pattern of work appeared to depend on age and possible the qualification of the pharmacist. As little excess idle time was found, any increase in the time devoted by pharmacists to patient-related activities would require a redistribution from other tasks. The results provide a base line for future studies, so that changes in the work patterns of pharmacists with time or with changes

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Appendix A

Pharmacists' Activity Categories

- Absent Absence from the pharmacy on business or for personal reasons.
- 2. Cashier Tasks involving use of a cash register.
- Clean-Up Cleaning and tidying the dispensary or selling area.
- Clerical (Dispensary) Prescription recordkeeping tasks.
- Clerical (Third-Party) Dispensing clerical tasks exclusively involving third-party claims for prescriptions.
- 6. Clerical (Office) Book-keeping and accounting for the business.
- 7. Communication-General Written and verbal communications with customers, staff and others about matters unrelated to health care.
- 8. Communication-Patient Written or verbal communications with patients on health matters, including counter-prescribing.

- Communication-Pharmacist Discussing health-related matters with other pharmacists or with staff in person or by telephone.
- 10. Communication-Physician Communication in person or by telephone with doctors.
- 11. Compounding Dispensing tasks specifically relating to compounding a prescription.
- Drug Selection and Transfer Selecting drugs required for a prescription and transferring them to and from the dispensing counter.
- Drug Preparation Filling drugs into containers for dispensing.
- Idle Activities unrelated to the professional or business duties of the pharmacist.
- 15. Information-General Acquiring information from inanimate sources where the information sought is of a general nature and related in some ways to the pharmacist's duties.

- Information-Specific As above but information sought must be for a specific purpose.
- Labelling Acitivities relating to labelling a prescription or other medicine.
- Managerial Acitivities which involve the pharmacist in his managerial function.
- Prescription Review Checking that a prescription order is complete and conforms with legal requirements.
- Pricing Calculating prices for prescription and OTC medicines and other non-health goods.
- Product Packaging Placing of goods or prescription items into a bag or other container for handing to a customer.
- 22. Product Selection and Transfer Selecting products other than health products and bringing them to the shop counter area for sale to a customer.
- 23. Stock Control Activities relating to the management of stock.
- 24. Travel Walking in the dispensary or shop.
- 25. Unobservable
- Upkeep Activities relating to the general maintenance of the dispensary.
- 27. Other