

Including Cost Analysis in a Framework for Evaluating Technology Use at Multidisciplinary Team Meetings in Healthcare

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Evaluation of work healthcare practices is problematic, and assessment of technology *use* in a particular work practice is often undertaken without fully taking account of the economic costs involved, including those of related work practices.

We propose a model of evaluation of the *use* of information communication technology (ICT) that takes account of the organizational, social *functions* and the patient services that are served in the process. We focus this study on multidisciplinary team meetings (MDTMs) as a technology in patient care. Multidisciplinary team (MDT) work and MDTMs are recommended for the management complex patients, and cancer patients in particular, by respected agencies. We also demonstrate the introduction of videoconferencing into the MDTM setting and the additional factors, including economic aspects, that need to be taken into account in the evaluation of its use.

Methodology: Data were gathered in a long-term ethnographic study with MDTs in a large tertiary referral teaching hospital.

MDTMs are complex collaborative work settings, with several highly specialised roles interacting and sharing information in text, images and speech. Pathologists present pathological results (including tissue images); radiologists review relevant radiology images, and clinicians present their findings. Radiation and medical oncologists, discuss treatment options with surgeons and other specialists. Each role can elaborate on their findings, ask and answer questions from colleagues, and refine or revise their assessment. ICT is used to assist in this complex task, particularly in demonstrating images, accessing electronic patient information, and building collaborative electronic records. Video-technology is often applied to extend the MDTM over several hospitals, to facilitate patient assessment and management in remote locations. Typically an MDTM is held weekly for approximately 1.5 hours. Up to 30 people are in attendance that include consultant specialists, senior registrars, house officers, nurses, as well as allied health professionals (dietitians, physiotherapists and speech therapists). In Sweden, referring doctors are also in attendance, although sometimes their attendance is facilitated by videoconference, like in Ireland. It has been reported that some MDTs, particularly for Head and Neck MDTs, that patients also attend while their case is being discussed. Our studies identify significant resources consumed in preparation for MDTMs in Radiology and Pathology Departments. Our studies calculate that 2 hours of preparation are required for radiologists per hour of MDTM; in pathology 2.4 hours are spent in preparation for an hours meeting. For a typical tertiary referral teaching hospital there is approximately 83.5 MDTM hours per month with an additional 324.4 hours of consultant time (pathologist / radiologist) spent in preparation for meetings. One hour of MDTMs costs 35-40 hours (i.e. one hour per attendee + 4.5 hours preparation); resources per MDT are equivalent to WTE 1.5.

When calculating staff costs, account must also be taken that for some MDTMs, staff

participant is voluntary, and outside their contracted hours. This voluntary participation for some MDT members is rooted in the team history and should be acknowledged in any evaluation.

Full economic assessment of MDTMs that takes account of patient benefits is needed. This paper provides the framework and first steps.

Key Terms: Evaluation Framework; MDT Meetings; Teamwork

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Bio

Bridget Kane is a Post-Doctoral Fellow in the Centre for Health Policy and Management, Trinity College Dublin. She is a medical scientist with post-graduate qualifications in management and health informatics. Her PhD in Computer Science is in the area of Computer Support for Collaborative Work (CSCW). She has held a Marie Curie (ERCIM) Fellowship 2012-2013, and IRCSET Fellowship 2009-2011. She also held an IRCHSS Post-Graduate Scholarship 2004-2007.