Chapter IV

Nursing Staff Requirements for Telemedicine in the Neonatal Intensive Care Unit

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This research gauged nursing staff acceptance of a videoconferencing system within a Neonatal Intensive Care Unit (NICU) and identified a set of recommendations to be integrated into system design to maximize usability of the system by nursing end users. Both qualitative and quantitative data was collected through interview and questionnaire methods, designed to elicit system requirements from the nursing staff perspective. It is argued that videoconferencing should not substitute the physical tradition in which neonatal infants are monitored, nor be seen as a replacement for face-to-face communication. However, videoconferencing may provide a workable alternative when face-to-face communication is not possible. In particular, clinical and medical staff should maintain control over the operation of video links at all times.
INTRODUCTION

Research Aims

The Neonatal Intensive Care Unit (NICU) at Salford Royal Hospitals NHS Trust, UK, along with the IT Institute, University of Salford, are currently developing a videoconferencing system for use within the NICU, under the “Medilink Project.” The system is primarily intended to provide parental access to NICU infants without worry of location, as well as creating a facility for remote teaching and clinical observation. The system will provide a real-time video link between the infant and the parents and staff, relaying both sound and visual information.

Rector et al. (1992) point to the poor record of system success in healthcare environments. It is argued that this lack of fruition may be attributed to the failure of the systems in meeting clinical requirements for usability. The degree of user involvement during the development process has been consistently identified as a key determinant of system success (Newman & Noble; Wastell & Sewards, 1995; Kontogiannis & Embrey, 1997). This research highlights the need to elicit user requirements at the onset of the development process and allow these to then drive the design of the system and interface and determine the functionality. In acknowledgment of such issues, user-centered design becomes a vital methodology in working towards usability, particularly in cases where potential stakeholder conflicts may arise. Gathering user requirements from all stakeholders involved may be argued to increase usability by enabling a sense of system ownership by end users through mediating functionality which is both relevant and actually required, and accounting for factors which may affect usability within the wider context of system use.

The initial proposal put forward by the Medilink Project identifies parents and infants as the key stakeholders in the videoconferencing system, whilst failing to account for the significant implications that such a system may bear upon working practices within the NICU itself. In response to this, our research employed the principles of user-centered design (Norman & Draper, 1986) and focused on nursing staff within the NICU as main end users of the proposed videoconferencing system. This may be substantiated by their role as both the primary carers for the infants on the ward as well as the main point of contact for parents.

As the Medilink Project incorporates several stakeholder interests, it is imperative to involve professional end users in the development process. Rector et al. (1992) argue that this form of user involvement may avoid serious
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