# Role-based Communication Patterns Within an Emergency Department Setting

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## Abstract

This paper reports results from an observational study of clinician communication patterns in an emergency department setting. The study took place in an urban Emergency department in New South Wales between July and September 2001. The main outcomes from this part of the study included measures of: clinician time involved in communication; number of communication events; choice of communication channel; overall interruption rate; and interruption rates related to clinical role.

**Introduction & Background:** Communication between health care providers accounts for between 60 and 90% of all information transactions within the healthcare system (Covell, Uman & Manning 1985; Coiera & Tombs, 1998). Further, communication failures within the health system have been reported to be a large contributor to adverse clinical events and outcomes (Donchin et al, 1995; Wilson et al, 1995; Bhasale et al, 1998).

The Emergency Department (ED) plays an important role within the health system. It is the main entry point to hospital for unplanned patient admissions.  It is a dynamic, unpredictable and complex environment operating twenty-four hours per day requiring rotating shifts of clinical and support staff (Croskerry 2000). The managers, clinicians and support staff within the ED deal with a complex set of variables on a daily basis (Fatovich 2002). Providing optimal patient care requires the coordination of many different teams and services within the health system. Effective communication both within and between teams is essential for achieving this coordination.

A previous ED study of Australian clinician communication patterns demonstrated that individual clinicians experience high communication loads (Coiera et al, 2002). Clinical subjects spent 80% of the time in communication, with 30% of those communication events classified as interruptions. Further, similar results regarding interruptions have been reported for US emergency departments (Chisholm et al, 2000; Chisholm et al, 2001). The abovementioned patterns of communication amongst clinicians were consistent with the results obtained from studies of British clinicians (Coiera & Tombs, 1998). Coiera and Tombs found that physician teams in a hospital setting were subject to high levels of communication interruption and appeared to bear a much higher communication load than necessary. Most importantly they found that simple interventions had the potential to reduce communication loads. This body of work has highlighted the value of studying clinician communication patterns. Through understanding the communication patterns within the clinical setting there is potential to then better understand the relationship between clinician communication and the quality of patient care.

**Method & Analysis**: Four registered nurses (RNs) and four medical officers were observed during their routine clinical work at an urban New South Wales Emergency Department. The observed clinicians were further divided into four categories based on their clinical roles, namely: RN coordinators (n=2), RNs with an allocated patient load (n=2), registrars (n=2) and junior medical officers (n=2).  Ethical approval was obtained from the relevant hospital and university ethics

committees. Subjects volunteered following an information session and consent was obtained prior to data collection. Subjects were shadowed for 2 to 4 hours by the researcher during the morning, afternoon or night shift of varying days of the week. The subject's conversations were audio recorded. Non-participatory observation techniques were used with the researcher observing from a distance, timing events and taking written field notes. The field notes captured information not able to be audio-recorded, such as writing in the medical record. The audio-recordings were transcribed verbatim, merged with the field notes and then transformed into formal descriptions of observed events using a prescribed list of coding rules (Spencer, Logan & Coiera, 2002). Following data entry, descriptive statistics were generated using SPSS.

A *communication event* occurred when the subject was involved in sending or receiving a message via a communication channel. An *interruption* was defined as a communication event that was not initiated by the observed party and occurred using a synchronous communication channel such as face-to-face conversations or the telephone.

**Results**: Total study observation time was 19 hours 52 minutes. In total 831 distinct communication events were identified, representing 41.8 events per person per hour. On average, 90% of clinicians' time was spent in communication events, with 76% being face-to-face contact. Just over one third (35.5%) of communication events were classified as interruptions, giving a rate of 14.8 interruptions per person per hour.

A finer grained analysis of interruption rates and clinician roles found considerable variation between clinical roles. Registrars and RN coordinators experienced the highest rates of interruption, respectively 23.5 (95%CI 18.8-28.44) and 24.9 (95%CI 21.9-27.9) interruptions per hour. By contrast, RNs with an allocated patient load and the junior doctors had lower rates, respectively 9.2 (95%CI 6.9-11.4) and 8.3 (95%CI 6.2-10.2) interruptions per hour.

**Discussion**: The results of this study are limited by the relatively small sample of subjects. In addition, the sampling did not capture all the clinical roles found within the ED, for example emergency consultants and triage nurses were not directly observed. However, the large percentage of time clinicians were involved in communication events, particularly face-to-face events, and the rate of interruption reported here supports previous study results (Chisholm et al, 2000; Chisholm et al, 2001; Hardy et al, 2001; Coiera et al, 2002).

The interruptive nature of clinical communication has been described in previous studies (Coiera & Tombs, 1998; Chisholm et al, 2000; Chisholm et al, 2001; McKnight et al, 2001; Coiera et al, 2002). Interruptions can be directly related to the communication channel being used. The most commonly used channel of communication in the clinical setting is face-to-face communication, this is known as a synchronous communication channel. Synchronous communication occurs when "two parties exchange messages across a communication channel at the same time" (Coiera et al, 2002). Clearly, synchronous communication requires the attention of both parties simultaneously, therefore, when a synchronous communication channel is used, the receiving party will be interrupted from the task at hand. Interruptions are seen as a source of concern as they have the potential to impact negatively on a clinician's working memory processes (Reason, 1990; Coiera et al, 2002). Whilst previous studies have pointed out that large numbers of interruptions occur, they have not looked further into the variation in interruptions related to clinical roles.

To better understand the context of interruptions in the clinical setting we have looked more closely at the relationship between the clinical roles of those observed and interruption rates. RN coordinators

and registrars experienced higher rates of interruptions than the RNs with an allocated patient load and the more junior doctors. This result might be explained by the greater involvement of senior staff (RN coordinators and registrars) in coordinating ED staff and activities.

The role of the RN coordinator within the ED is pivotal, as the RN coordinator is responsible for coordinating the overall activities within the ED. During the observation period these activities included: organising and supporting staff, patients and families; bed management; coordinating and facilitating transfer of patients out of the ED; ensuring patients receive adequate medical review from ED and specialty teams; facilitating intra and inter-team communication; responding to enquiries; as well as responding to emergency situations. In addition to highly developed clinical skills, the RN coordinator has an in depth knowledge of departmental policy and procedures.

During the observation period, registrars coordinated the medical activities in the ED. These activities included: supporting, supervising and educating junior medical staff; seeing patients; performing clinical procedures; interacting with nursing staff; informing the ED Consultant of patient and department status; communicating with specialised medical teams and general practitioners outside the department; as well as responding to emergencies as they present.

Both these roles require a high level of communication that is timely and accurate, as well as the ability to respond quickly and appropriately to whatever circumstances present. In an unpredictable and complex environment, synchronous channels of communication are needed to both give and receive continually changing information, since synchronous channels allow the involved parties to obtain immediate feedback.

Whilst RN coordinators and registrars require high levels of synchronous communication, and as a result experience high levels of interruption, certain tasks may still be better dealt with using different communication channels. Investigation into task and channel choice will be carried out in the near future. There is also scope in the future to investigate whether the interruptions were directed to the appropriate role or perhaps could have been dealt with via a different source.

**Implications**: Examining clinician communication patterns allows for the identification of existing communication practices that may be amenable to improvement. Our results show that registrars and RN coordinators have a higher rate of interruption than RNs with an allocated patient load and junior medical staff. This highlights the importance of looking more closely at clinical roles so that interventions to support communication processes can be targeted at the clinical roles that would most benefit.

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