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Medical Emergency Calls and Pre-Hospital Communication

Background

In Region Nordjylland, Denmark, people requiring medical assistance can contact the Emergency Medical Services by dialing 1-1-2. However, the callers may not always be able to assess the clinical condition as well as the nature of the medical help needed. In such circumstances, during the process the medical call taker usually gathers all relevant information, as deemed appropriate, for efficient handling of the individual case. The medical call-taker assesses the need and urgency supported by criteria-based dispatch system, The Danish Index for Emergency Care, and decisions have to be made quickly in the most urgent cases.

A key aspect of the emergency calls is that the caller is not necessarily the one needing medical help. Rather the caller mediates the call on behalf of the affected person. The caller therefore becomes a key variable in the communication process. The caller may either be a close relative or a stranger and this positioning may influence the nature of the call, the procedures that follow and possibly the outcome. The information the caller provides in response to the call-taker's questions will vary depending on, among other things, the relationship between the caller and the affected individual.

Other key variables in the interaction process as well as the ensuing outcome are the call-taker, the affordance and use of available technology. From the perspective of the call-taker, it is a highly mediating process as the interaction takes on a complex character, i.e., some questions may be directed at the affected individual as relevant and then mediated through the caller while transmitting relevant information to the dispatch centre, the ambulance services and the relevant departments at the hospital. The call-taker has to co-ordinate his/her tasks mediated by technology, e.g. multiple computer screens displaying the electronic patient record, the current status of ambulance services, the availability of paramedic teams etc.

The aim of the proposed study is to examine systematically a corpus of real-life emergency medical calls in Region Nordjylland. We will focus on a specific cohort of callers who complaint of breathlessness/dyspnoea – the well-established reasons for a large volume of such calls. Our analytic task is to determine the extent to which the patterns of interaction are mediated by callers, call-takers, the technology and the

clinical condition itself (i.e. breathlessness, chronic pain) and the decisional outcomes that such mediations result in.

Previous research

Although our focus will be 112 emergency medical calls, in this section we offer a broad overview of both emergency and non-emergency calls that have been studied in different settings with different analytic foci. A great deal of work has been devoted to the study of NHS Direct in the UK, the telephone health information and advice service. As in Denmark, the core staff in NHS Direct consist of experienced nurses, but the calls are mediated by the decision support software with numerous protocols, which not only influences the interaction trajectories but also the triage outcomes. The main focus has been the interplay of information and advice, the role of expert systems etc. (see Edwards 1994; Goode and Greatbatch 2005; Greatbatch et al 2005; Hanlon et al 2005; Ruston 2006). Other researchers have examined out-of-hour calls, especially in the British primary care setting (for an overview see Hurst 2006).

Of particular relevance is the study of NHS Direct calls by Pettinari and Jessopp (2001). They identify three broad areas in which nurses anticipate and manage absence of co-presence; (i) gathering information, (ii) delivering information, advice and reassurance (iii) building trust and rapport. They single out the importance of listening for background information and attention to the caller's concerns as a way of 'managing the absence of visibility'. What they call 'transposing caring' becomes a verbally explicit activity, parallel to what the nurse would do in a co-present situation. Tjora (2000) has analysed medical emergency calls in the Norwegian setting, with a focus on the tensions between nursing and medical professionals when technology, including the doctor-designed Index for Medical Emergency Assistance, undermines experiential knowledge and fails to mediate the boundaries of expertise.

In 112 calls the call-taker is also under pressure to make decisions on a contingent basis to secure low ambulance response times. In the initial stages of the project, we will undertake a systematic review of literature concerning the handling of emergency calls (e.g. 112 in Denmark and Sweden, 113 in Norway, 999 in the UK and 911 in the USA) to determine their interactional trajectories.

Research questions

- What are the emergent interactional structures of medical emergency calls? In what ways do call-takers use question-response sequences, offer instruction and/or advice to callers while ensuring effective communication with others (dispatch service, ambulance and paramedic teams, hospital departments etc.)?

- To what the extent is the caller a key variable with regard to information exchange given his/her relationship with the affected individual? More

specifically, how does the caller's relationship with the affected individual influence the nature of question-answer-instruction sequences?

- In what ways does the call-taker's professional experience influence their performance when they deal with individual cases vis-à-vis existing guidelines?

Methodology

The data site is the Emergency Call Centre (AMK-vagtcentral) which handles all 112 calls. The call takers are mainly qualified nurses with different specialities and variable levels of experiences in telephone-mediated medical emergency service.

The main data corpus will consist of audio-recordings of calls (calls are automatically recorded for institutional purposes). The calls will be transcribed following discourse analytic conventions and then translated for in-depth analysis. Where possible, documents and field observations will be accessed as supplementary data. All personal and locational information will be anonymised for maintaining confidentiality. Usual ethical clearance will be obtained prior to data transcription/translation.

Analytical framework

The analytical framework to be adopted for current purposes is theme-oriented discourse analysis (Roberts and Sarangi 2005), supplemented by activity analysis (Sarangi 2010b). Activity analysis allows for structural, interactional and thematic mapping of encounters in their entirety as a basis for selecting extracts concerning critical moments in their interactional environments for in-depth analysis.

Of particular analytic significance are the following discourse features: question-answer sequences; delivery of advice and/or instruction; repetition; use of online and offline commentaries.

Practical implications

The insights generated through in-depth discourse analysis will form the basis of professional training and awareness raising. Workshops will be targeted at specific groups of call takers and the training will be firmly grounded in real-life data and systematic discourse analysis of key excerpts. Participants will be encouraged to reflect on their routine practices (as similar to or different from) sample extracts under analysis. The goal is to appreciate different ways in which callers and call takers engage in particular occasions, which are bound to differ from case to case. This means that rather than training professional call takers in a recipe-style skill-set, the purpose is to view telephone and computer mediated communication in medical emergency settings as requiring a range of resources on the part of the professionals to be configured differently to suit emergent contingencies.

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