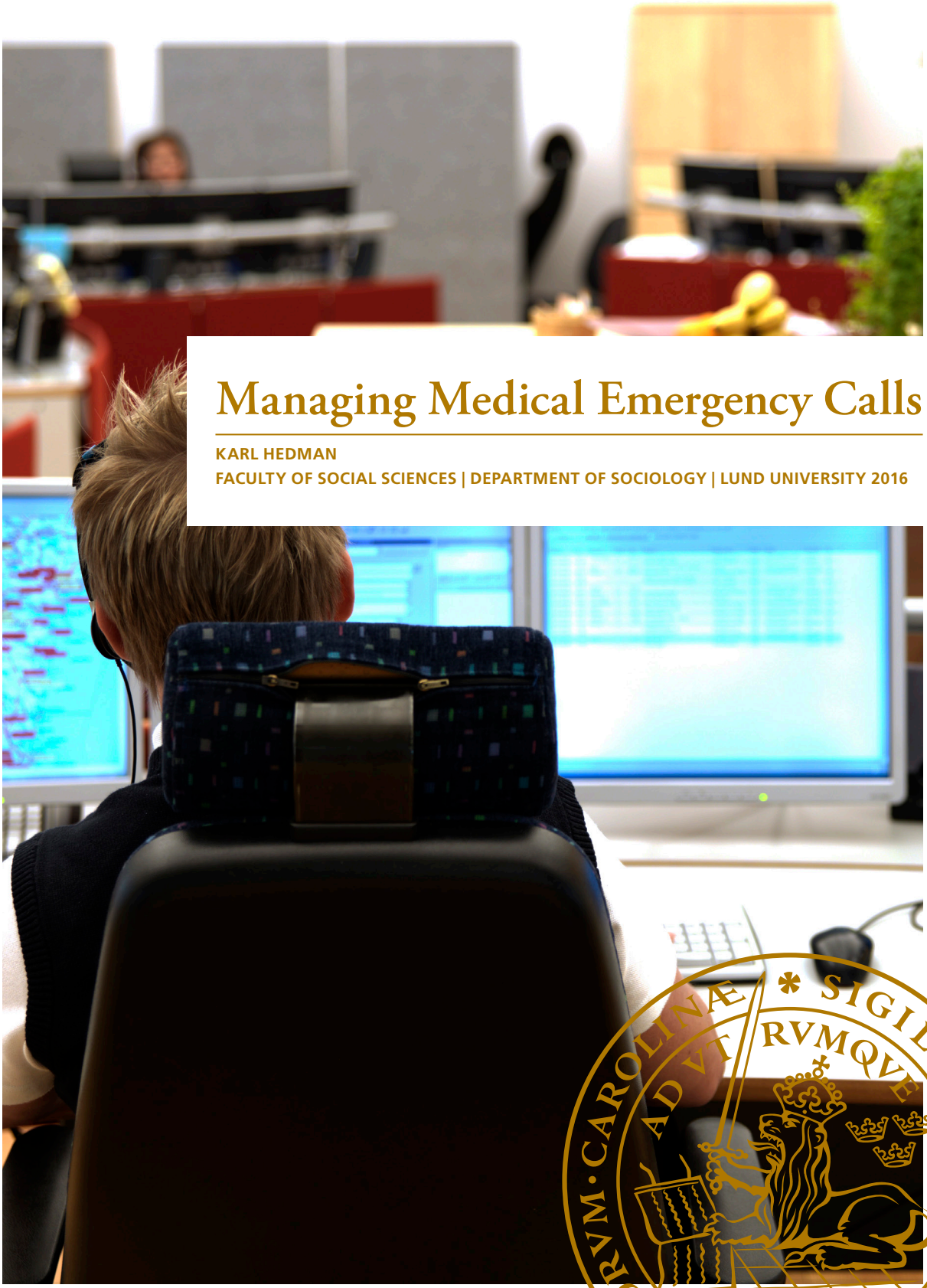

Managing Medical Emergency Calls

KARL HEDMAN
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LUND
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Abstract

This dissertation is a conversation analytic examination of recurrent practices of interaction in medical emergency calls. The study expands the analytical focus in past research on emergency calls between emergency call operators and callers to pre-hospital emergency care interaction on the phone between nurses, physicians and callers. The investigation is based on ethnographic fieldwork in a Swedish emergency control centre. The data used for the study consists primarily of audio recordings of medical emergency calls.

Fundamental procedures in medical emergency calls examined in the dissertation are: (1) questioning; (2) emotion management; (3) risk management and (4) instruction giving. Emergency call-takers ask questions to elicit descriptions by callers of what is happening and to manage symptoms of patients to help keep them safe until ambulance crews arrive. In the questioning practice about acutely ill or injured patients call-takers use mainly yes-no questions and clarify problems by questioning callers making a distinction between defined and undefined problems. The analysis reveals four core types of emotion management practices: (1) call-takers keep themselves calm when managing callers' social displays of emotions; (2) promising ambulance assistance; (3) providing problem solving presentations including emergency response measures to concerns of callers, and (4) emphasising the positive to create hope for callers. Call-takers use seven key procedures to manage risk in medical emergency calls: (1) risk listening through active listening after actual and possible risks; (2) risk questioning; (3) risk identification; (4) risk monitoring; (5) risk assessment; (6) making decisions about elicited risk and (7) risk reduction. Instruction giving using directives and recommendations is accomplished by call-takers in four main ways: (1) acute flow maintaining instruction giving when callers are procedurally out of line; (2) measure oriented instructions for patient care and emergency response management; (3) organisational response instructions and (4) summarising instruction giving. Callers routinely acknowledge risk identifications and follow instructions delivered by call-takers to examine statuses and life signs of patients such as breathing, movement and pulse, and perform basic first aid and emergency response measures.

The findings generated from this study will be useful in emergency call-taker training in carrying out interactive procedures in medical emergency calls and add to the larger research programmes on on-telephone interaction between professionals and citizen callers. This is an essential book for pre-hospital emergency care providers and institutional interaction researchers and students.

Key words Conversation Analysis, emergency call operator, emotion management, instruction giving, medical emergency calls, nurse, physician, questioning, risk management, Swedish.

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For Maria, Bianca and Heidi

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As this list concludes it comes closer to home as I dedicate this book to my family. I want to express heart-felt gratitude to my lovely and gifted wife Maria Guillory Hedman and wonderful daughters Bianca and Heidi for unconditional love having contributed with invaluable encouragement, perseverance and unwavering support. Finally, I want to express appreciation to my mother Monica Hedman, recently deceased father Arne Hedman, my sister Anna Frändås with family, and mother-in-law Mary J. Guillory in Baton Rouge, Louisiana, United States.

Karl Hedman

Trädet, 25th of April, 2016

Abbreviations

C	Caller
CA	Conversation Analysis
D	Doctor
O	Emergency call operator
N	Nurse
P	Patient

1 Introduction to medical emergency calls

Medical emergency call practices

The societal problem that lives of acutely ill and injured persons may be saved, improved or lost as an outcome of what on-scene callers and emergency call-takers do or do not do in medical emergency calls makes this study an important research project. This dissertation examines what recurrent practices of interaction emergency call-takers and callers use to accomplish medical emergency calls. Extract 1:1 about a kidney disease patient begins the exploration of these interactive phenomena.

Extract 1:1 [Kidney disease] (1A17:111)

109D→.hhja okej men då är det bara att
.hhja okay but then it is just to

110 se till att andningsvägarna är
make sure that the airways are

111 fria så att han får luft hela
free so that he gets air the whole

112 tiden å hjälp är på väg
time and help is on the way

113 å är det så att han får
and in the case that he

114→ andningsuppehåll nu så får vi se till
stops breathing now then we make sure

115 att han får gjort hjärtlungräddning
that he gets done cardiopulmonary resuscitation

116 å konstgjord[andning?
and mouth to [mouth resuscitation?

117 C [Nä det har ja har inte
[No I have I haven't

118 gjort det.
done that.

119 D Det har du inte gjort det nä.
You haven't done that no.

120 C Ja har gjort konstandn- konstgjord
I have done mouth breathing – mouth

121 andning på dockorna.
to mouth resuscitation on the dolls.

122 D Du har blåst luft i alla fall.
You have blown air at least.

123 C Ja.
Yes.

124D→Då är det första hjälpen om han
Then it is first aid if he

125 skulle få andningsuppehåll.
would stop breathing.

126 (3.0)

127 C Ja nu verkar ( ).
Yes now seems ( ).

In this segment the physician provides instructions to the caller about what he should do in the instruction format "if X happens then do Y". Risk management and measure planning are vital practices in medical emergency calls to respond to and monitor current conditions of patients in relation to future, hypothetical conditions, symptoms or emergency related problems to optimise patient health outcomes. In light of this type of result I pose the question, what happens in a medical emergency call in regards to co-handling the condition of the patient when those close to the patient are involved? How does it come about and is introduced that they are instructed to be prepared to actually perform basic first aid measures like cardiopulmonary resuscitation themselves? Not giving cardiopulmonary resuscitation to a patient who stops breathing and does not have a pulse generally follows in the death of the patient. This fragment raises a number of questions for

the caller, the physician and for the conversation analyst. What interactive practices become relevant to provide emergency care to the patient? What causes an emergency call-taker to initiate interactive procedures and in what positions of the call are different procedures initiated? What are the practices about and what formats do they have? What has the caller done to respond to the emergency situation? How does the caller respond to actions that the physician delivers? I will return to this call and these questions in the empirical chapters of the study.

Calls to the Swedish emergency number 112 are received by emergency call-takers in the emergency control centre. The term *emergency call-takers* refers to emergency call operators, nurses and physicians, and is used in this thesis when I discuss emergency call operators, nurses and physicians as a call taking team. The emergency control centre splits the roles of emergency call-takers and emergency medical dispatchers. Emergency medical dispatchers decide on the type of response needed. The person who calls the emergency number is labelled "Caller" or "Patient" because among other reasons it is commonly the case that the caller is someone else than the person who is sick or injured. In medical emergency calls call-takers and callers manage activities connected to emergency medical dispatcher decisions of delivering the particular outcome of medical emergency calls, granting or rejecting ambulance assistance.

In this study, medical emergency calls are approached through a Conversation Analysis of human social interaction in naturally occurring calls examining single cases and collections of interactive practices of medical emergency calls and how these are implicated in local medical emergency situations. CA develops an empirical theory of action for Sociology which has been viewed as a central goal of Sociology since Weber (Weber 1978; Schegloff 1996; Heritage and Stivers 2014:673). I share the view of interactive practice with Heritage and Stivers (2014:665) that define a *practice* as "any aspect of action that (a) has a distinctive character, (b) has a specific location within a turn or sequence, and (c) is distinctive in its consequences for the nature of meaning of the action in which it is implemented". Schegloff (1996:5) claims that "Talk is constructed and is attended by its recipients for the action or actions it may be doing". CA thus builds spoken interaction theory empirically. Actions in medical emergency calls are achieved and oriented to by call participants using interactive procedures through which acute telephone contacts are shaped and re-shaped. Medical emergency call practices refer to how call-takers in social interaction with callers handle an unanticipated variety of conditions that calls for direct action, routinely with life-threatening consequences, such as unconsciousness, heart and respiratory related emergencies and suicide attempts. Each unique emergency is shaped by patients, callers, bystanders and emergency call-takers who encounter it. When participants in medical emergency calls are unable to accomplish particular actions in emergency response operations persons may die or their conditions may worsen.

The consideration of past interactional research on emergency calls (discussed in chapter 2) demonstrates that *emergency calls* are viewed as action sequences in progress that methodically are formed into emergency calls. Past studies on emergency calls to the police and fire services have mainly researched telephone interaction between emergency call operators and callers and specifically the formats of emergency assistance requests and interrogative sequences, call openings, and implications of interactional troubles. Emergency calls are grounded on an adjacency pair – a request for help by the caller and a granting or rejection response by the call-taker. This study expands the analytical focus in past research on interaction between emergency call operators and callers[1] to pre-hospital emergency care procedures carried out by nurses, physicians and callers[2].

The reason why I have chosen the sociological approach CA to investigate medical emergency calls is the interactive context focus of CA of what people do and not do when talking together. The CA approach has a number of advantages over other perspectives. Most obviously, CA offers ways of collecting audio and video recorded data and formulating understandings of spontaneous, naturally occurring social interaction which derive from encounters existing independently of the researcher's intervention (Silverman 2011:317). More importantly, the inductive CA approach is "naturalistic" and closely examines what actually occurs in social interaction.

Audio recorded telephone calls[3] to the Swedish emergency number are used in this inquiry to study, sort and examine how participants interact in medical emergency calls. It is by achieving medical emergency calls together that call participants build each specific call with its social structures, perceived characteristics, and outcomes. CA offers an analytic resource through which we can begin to examine the opportunities provided by re-listening of the audio recordings of telephone calls. The possibility of analysing aspects of audible features of telephone interaction provides other researchers access to social structures of medical emergency calls and consequentially the opportunity to compare how they analyse the same material.

Telephone interaction between emergency call-takers and callers may be analysed as conversations by studying the basic interactive issues, how participants

[1] Interaction between callers and emergency call operators in Swedish emergency calls has been described in past research by, for instance, Hedman (1997), Nordberg (1999), Osvaldsson et al. (2006, 2007, 2013), Cromdal et al. (2007a-d, 2008a-b, 2012a-b), Lundberg (2007) and Persson Thunqvist et al. (2008, 2012).

[2] Few emergency control centres in Sweden have physicians working in the emergency control room. The emergency control centres are usually staffed with only emergency call operators and nurses.

[3] The principal database for this thesis is telephone calls. I will accordingly concentrate on spoken interaction as a source for achieving and orienting to social actions. For video recorded data of face-to-face interaction, visual aspects of interaction and non-vocal actions such as eye gaze, body orientation and gestures are just as significant as words are (Goodwin 1981, 1986). A related field of research to medical emergency calls is telephone healthcare advice calls achieved by nurses and callers (Kaminsky 2013; Williams 1995; Crouch et al. 1996, 1998; Dale et al. 1997; Wahlberg 2004, 2007) and Wahlberg et al. (2002, 2005).

take turns or how one action is followed by another action to form interactional sequences which have been done in conversation analytic research on ordinary conversation. However, this dissertation is based on the institutional interaction perspective by studying interactive practices in medical emergency calls in particular as human social interaction formed by the concerns and institutional requirements of the emergency control centre[4]. I am also explaining the management of medical emergency call operations based on ethnographic data including observational field notes from observing call-takers in the emergency control centre, manuals of the emergency control centre and unstructured interviews with emergency control centre professionals collected in and after my fieldwork in a Swedish emergency control centre.

Research aim of the study

The research aim of this dissertation is the description and explication of recurrent practices of interaction by which emergency call-takers and callers accomplish medical emergency calls. Fundamental practices in medical emergency calls selected to be analysed are: (1) questioning, (2) emotion management, (3) risk management and (4) instruction giving[5]. Central research questions posed in the thesis ask for an examination of positioning, contents, composition and response contexts of the interactive procedures investigated:

- At what positions of medical emergency calls and how are questioning, emotion management, risk management and instruction giving initiated in medical emergency calls?
- What are questioning, emotion management, risk management and instruction giving about in medical emergency calls?
- How do emergency call-takers and callers compose questioning, emotion management, risk management and instruction giving in medical emergency calls?
- How do medical emergency call participants respond in questioning, risk management, emotion management and instruction giving practices?

[4] Heritage 2005; Heritage and Clayman 2010:16.

[5] The reason for choosing the interactive practices of questioning, emotion management, risk management and instruction giving is that they have not been investigated extensively in past research on medical emergency calls. Assessment and decision-making are other central practices in medical emergency calls which I will not examine further in this dissertation due to space limitations.

Positioning, contents, composition and responses are central analytical themes in the CA research tradition. In chapters 5-8, I also seek to add further insight to the study of identities within questioning, emotion management, risk management and instruction giving in medical emergency calls and the way identities may be achieved, presented, sought after, used and oriented to by the call participants. Additionally, I examine how the design of these practices may depend on the identities of the participants.

Structure of the thesis

The ten chapters of the thesis considers the perspective and methods of CA and the findings of interactive practices in medical emergency calls. Chapter 2 provides a theoretical background to CA by describing the theoretical assumptions, analytical strategies and central principles that inform this approach. CA is here compared to three related sociological perspectives. In outlining the overall theoretical framework for the study I am discussing past research on the topic of institutional interaction. I also review past interactional research on emergency calls and the four interactive practices that are analysed in this study.

Chapter 3 presents the data sets and methods demonstrating how the empirical data from an emergency control centre was collected and processed. The conversation analytic data used for the thesis consists of audio recordings of medical emergency calls between call-takers and callers. The recordings are analysed to explicate how actual interactive processes unfold. The chapter also discusses ethnographic observations and field notes. In chapter 4, I analyse medical emergency calls in micro- and macro contexts including medical emergency calls in practice, the multitude of listeners to and systematic surveillance of call participants in medical emergency call operations, the decision support system and organisational structures of the emergency control centre, the Swedish emergency response organisation SOS Alarm and ambulance services.

The empirical chapters 5-8 present the exploration of four central interactive practices in medical emergency calls that will be investigated through a detailed conversation analysis. Chapter 5 considers questioning practices. Chapter 6 deals with emotion management procedures. Chapter 7 explores risk management. Chapter 8 analyses instruction giving. Chapter 9 summarizes the major findings and arguments. The final chapter will recapitulate the main points of the dissertation in Swedish. My hope is that this research will contribute to a deeper understanding of how medical emergency calls are achieved.

2 Conversation Analysis and past research on emergency calls

Conversation Analysis

The main theoretical and methodological underpinning of this dissertation is Conversation Analysis[6]. CA is a detailed analysis of human social interaction in naturally occurring situations. In this chapter, I will discuss the conversation analytic approach to when people are talking to each other by presenting theoretical assumptions and goals of analysis of CA. I will also compare CA to three other sociological traditions, and by doing so place CA within a sociological framework. A branch of CA is the field of institutional interaction which will be introduced in this chapter. Finally, I will discuss past research on emergency calls and the four interactive practices that I analyse in this thesis.

The field of CA was formed in the late 1960s and early 1970s primarily by the sociologist Sacks (1995) and his close associates Schegloff (1968) and Jefferson (2004). Sacks who made the first strategically and practically significant moves in the conversation analytic lifeline in 1964-1965 (Schegloff 1995:xvii) wanted to in his own words "develop a sociology where the reader has as much information as the author, and can reproduce the analysis" (Sacks 1995:27). By working with detailed and openly available transcriptions of audio- and video-recordings of naturally occurring human social interaction to study the organisation of social action the sociologists can "re-do the observations" (Sacks 1995:27). The implications of the actions performed by interacting persons are understood and oriented to relative to their sequential context. In this viewpoint, CA builds on the

[6] For a more detailed discussion of the main principles in CA see Atkinson and Heritage 1984; Drew and Heritage 2006a-d; Fitch and Sanders 2005; Heritage 1984; Hutchby and Wooffitt 2008; Levinson 1983; Maynard and Clayman 1991; Peräkylä 1995; Psathas 1995; Sacks, Schegloff and Jefferson 1974; Schegloff 1968, 1995, 2007; Schegloff and Sacks 1973; Sidnell and Stivers 2014; ten Have 2007 and Zimmerman 1988.

ethnomethology of Garfinkel (1967) which Heritage (1984) and Silverman (1998) have discussed[7].

Drew and Heritage (2006a-d) depict CA as a line of work relating to the social nature of language use in human social interaction. CA examines how people use common sense knowledge in social interaction, and reveals structures of everyday human experience and social actions (Maynard 2014:28). Human social interaction is the key means through which cultures are expressed, social structures are achieved and reproduced, identities are established, and social relationships are maintained (Goodwin and Heritage 1990). CA is an empirical and descriptive research approach which reveals the achievement of "order" through social interaction in naturally occurring situations (Sacks 1995:484). CA demonstrates the sequential organisation of what Schegloff (1997) has called talk-in-interaction, actions actors carry out when they interact, and construction of individual turns at talk. CA identifies sequential patterns in interaction that form proof of regular usage and may be recognised as "interactive practices". Heritage and Stivers (2014:663) claim that CA was formed on four theoretical assumptions:

(1) The idea that there is order at all points in human social interaction. Sacks argues that "order at all points" can describe what people do when interacting together (Sacks 1995:484). Heritage and Stivers (2014:663-664) claim that "all behaviour should be examined under the assumption that it is orderly, communicatively meaningful and distinctive in terms of the construction of social interaction". CA comprehends social order as mutually achieved and oriented to by speakers and intended receivers in social interaction (Sacks, Schegloff, and Jefferson 1974; Schegloff and Sacks 1973; Schegloff, Jefferson, and Sacks 1977).

(2) The theoretical assumption that human social interaction is locally organised and that "social actions are produced, in the first instance, by reference to their immediate local interactional context" (Heritage and Stivers (2014:664).

(3) The view that human social interaction is structurally organised and that the details of human social interaction can be perceived with reference to structural organisation on an interactive level and that "this structure is anterior to and shapes the construction of action in interaction" (ibid. 2014:664). The practices that inform these activities are normative in that "interactants are understood to produce and recognize one another's social actions via a rule-guided system" (ibid. 2014:664) in terms of which they hold one another morally accountable when not using these practices and for the implications that may be produced when departing from the normative framework.

(4) Human social interaction creates and maintains intersubjective reality for conversational participants. Heritage and Stivers (2014:664) argue that

[7] Other traditions of analysis developed at the same time as CA which Leppänen (1998a:30) has shown are speech act analysis (Austin 1962, 1979, Searle 1969, 1975, 1976; Searle and Vanderveken 1985) and discourse analysis (Stubbs 1983; Schiffrin 1994; Gee 2014).

"understanding in interaction, is in the first instance, produced and owned by the participants in interaction, and generated as an endogenous feature of interaction. For example, accepting an invitation is a second speaker's way of indicating that s/he understood the prior social interaction to be an invitation, and accepting that acceptance is a first speaker's way of confirming that". CA examines human social interaction in which intersubjective understanding about the conversational participants'orientations is constructed and sustained. Heritage and Stivers (2014:665) underscore that the interactants' "own understandings as having primacy relative to analysts' understandings" which is expressed in the "CA 'proof procedure' which requires that an analysis of any given phenomenon be grounded in the participants' orientations to the relevant order". These theoretical assumptions are used by conversation analysts when examining interactive practices in everyday conversation or in institutional interaction.

In the conversation analytic theory of human social interaction talk is action, action is structured and "relevantly" locally organised by interactants (Mandelbaum 2008:178-181). Heritage (1997) discusses CA based on how participants in social interaction accomplish, interpret, understand and repair utterances embedded in interactional contexts. Context is pivotal to interaction. A central thought in CA is the twofold formation of interactional context. Social action is equally context-shaped and context-renewing. Participants in an interaction both create and renew contexts (Heritage 1984a:242). The context-shaping refers to that the participants orient to the interactional context when producing their actions. The context-renewing aspect of interactional context refers to that the context is built in and through action. Actions add content to the interactional context or modify the context which was provided in the prior turn and allocate means to understand the following action. "Immediate context" is often mentioned in CA literature and refers to the interactional context directly preceding a turn and is essential to the understanding of the action produced through the turn (Heritage 1997; Sacks 1987, 1995; Schegloff 1984; Schegloff and Sacks 1973).

This idea of interactional context is integrated with the idea of intersubjectivity as a shared and interactionally achived intersubjective reality. As context is formed around comprehensions of talk and expectations of subsequent talk, intersubjectivity concerns how people mutually understand each other when talking, what they understand about each other, and the interactive practices they use to repair damaged reciprocal understanding. The main ideas about intersubjectivity came from Schütz (Schütz and Luckmann 1973, 1989) and is termed "shared agreement" by the ethnomethodologist Garfinkel (1967:30).

The conversation analytic literature is vast. Groundbreaking conversation analytic investigations have examined social structures of openings (Schegloff 1967, 1979), closings (Schegloff and Sacks 1973), turn taking (Sacks, Schegloff and Jefferson 1974) and repair organisation (Schegloff, Jefferson and Sacks 1977). Other fundamental concepts in CA research are adjacency pair (Sacks 1995;

Schegloff 2007) and preference (Sacks 1995; Pomerantz 1984). There is also a vast conversation analytic literature in the Nordic countries[8]. Conversation analytic research that is relevant for this thesis will be discussed in chapter 2. The above research demonstrated that human social interaction is fundamentally structured as pairs of turns of talk or actions. The first pair part, for instance, a question generates a particular significance to a certain action in the second pair part (an answer). Actions that concur with what was proposed in the first turn are favoured over turns at talk that oppose the previous action. This preference structure is sustained in spoken interaction in the course of indicating denial or divergence as troublesome, for instance, by waiting to reply to the earlier turn (Sacks 1995; Pomerantz 1984; Schegloff 2007.)

Conversation Analysis in relation to other sociological perspectives

From an epistemological perspective, CA was built in relation to the ethnomethodology of Garfinkel and Goffman and his stance towards the interaction order (Drew and Heritage 2006a:xxiii). The phenomenological sociology of Schütz and its focus on everyday reality inspired the development of ethnomethodology. I understand CA as a distinctive line of ethnomethodology. This section compares CA to these three sociological perspectives by summarising similarities and differences among the conceptual frameworks with consideration to their aims and procedures. By bringing into the light the sources and details of these traditions connections may be made between the research questions of these approaches and the objectives of this study.

[8] Examples of conversation analytic research in the Nordic countries are the AIDS counselling, doctor-patient and psychotherapeutic practice research of the Finish conversation analyst Peräkylä (1995, 2014). Another significant conversation analyst in Finland is Sorjonen (2001). Examples of CA introductions in Swedish are Londen (1995), Norrby (1996) and Leppänen (1997). In Sweden, CA has been used in research by, for instance, Leppänen on Swedish interaction between district nurses and patients and telephone advice nursing (Leppänen 1998a-b, 2002, 2005, 2008a-b, 2010a-b; Leppänen and Lindström 1999; Leppänen and Sellerberg 2004) and explorations by Lindström of Swedish conversations (1994, 1997, 1999a-b). Conversation analysis in Denmark is represented by, for instance, Heinemann (2008, 2010).

The phenomenology of Schütz

The phenomenology of Schütz (1954, 1962, 1970) combines: (1) the phenomenology of Husserl focusing on the reality of everyday life of how individuals make sense of particular experiences or phenomena (social objects and events as perceived by humans), and (2) the sociology of action and understanding of Weber into a systematic phenomenological approach to sociology. The objective in Schützian phenomenology is to understand the meaningful creation of social reality by individuals occupied in an on-going interpretation of the world in social interaction with other human beings. The everyday reality focus of Schütz influenced Garfinkel when creating ethnomethodology.

Schütz examines how humans in face-to-face situations here-and-now constitute social order by orienting and acting in life situations, perceiving, recognising and differentiating social objects and events; making inferences about causes for the occurrence of episodes and comprehend time. He states that these sense-making of subjective (ascribed to a person's own experiences and actions) and objective (the significance ascribed to the manner of another human being by an onlooker) meanings are closely connected to the meaning structures of the social life-worlds of humans. The lifeworld (from the German word Lebenswelt) of everyday life is the entire realm of occurrences and experiences of a person which is restricted by objects, taken-for-granted routines, habits, practical knowledge, individuals and occasions that a person comes across in the quest of the practical aims of existence. The interpretation of everyday life is grounded in a stock of earlier experiences of everyday reality, our own experiences and knowledge handed down to us by parents, grandparents and teachers, which in the form of "knowledge at hand" function as a scheme of reference (Schütz 1970:72) that anchors and orients persons. A strand of sociological inquiry influenced by Schütz's phenomenology of everyday reality and experience is ethnomethodology created by Garfinkel who focused on the organisation and ordering of experience.

Ethnomethodology of Garfinkel

Based on the phenomenology of Schütz the ethnomethodology of Garfinkel (1967) claimed that social objects and events actively established in consciousness and that the everyday social reality is about everyday shared sense making. Ethnomethodology aims to understand the shared methods through which societal members make sense of and account for their daily activities. The emphasis is on how societal members accomplish shared reality and social order through human social interaction. Ethnomethodology has a detail focus on the ongoing achievement of social reality, shared methods societal members use to make sense of everyday experiences in different environments and the orderliness of action and meaning-

making when studying social interaction: "Ethnomethodological studies analyse everyday activities as members' methods for making those same visibly-rational-and-reportable-for-all-practical-purposes, i.e., 'accountable', as organizations of commonplace everyday activities" (Garfinkel 1967:vii). Silverman (2010:434) claims that ethnomethodology "seeks to describe the methods that persons use in doing social life. Ethnomethodology is not a methodology but a theoretical model". This theoretical model accentuates the shared methods of producing, recognising, reasoning and understanding social actions and mutual activities of the interactional participants (Drew and Heritage 2006a:xxiii).

"Ethnos" is the Greek word for people. The term "ethnomethodology" refers to the methods social actors use to create an ordered reality. Ethnomethodology is focused on the socio-culturally determined, classifying methods societal members use to identify, produce accounts of, and achieve everyday institutional and social routines that accomplish social order. Garfinkel examines how societal members or participants of society utilise different ethno-methods or shared methods of practical reasoning to make their life-worlds comprehensible and accomplish actions comprehensionable to other actors (Heritage and Clayman 2010:9). The latter authors argue that "these methods also function as a resource for the production of actions. Actors tacitly draw on them so as to produce actions that will be accountable – that is, recognizable and describable – in context. Thus, shared methods of reasoning are publicly available on the surface of social life because the results of their application are inscribed in social action and interaction" (ibid. 2010:11). From an ethnomethodological perspective presented by Maynard (2014:21) "utterances are indexical and related to the time, place and other aspects of context for their understandability". In the examination of medical emergency calls, indexicality refers to that the meanings of spoken interaction between emergency call-takers and callers depends on the social situation in which the interaction occurs. Ethnomethodology can consequently be used to analyse how individuals achieve social order and the mutual understandings and productions of the social reality.

In the 1960s Garfinkel executed a series of explorations that outlined the basis of ethnomethodology (Garfinkel 1963, 1967). He portrays ethnomethodology as research on practical activities, practical organisational reasoning and knowledge based on common sense (Garfinkel 1967). Ethnomethodology employ breaching experiments created to depart from taken-for-granted social expectations and disrupt a particular micro-social reality with the intention of showing the fragility that underlies the routines and order of everyday reality. Garfinkel's (1967:35-75, 263-277) interest in "the routine grounds of everyday activities" made him and other ethnomethodologists pursue a number of breaching experiments to demonstrate that individuals hold each other normatively accountable for doing the active work involved in accomplishing shared understandings. An example of a breaching experiments is when students as research investigators or assistants are asked to act as polite visitors or as strangers in their own home (Garfinkel 1967:42-44). Another

example is to have conversations with friends and to ask for clarification of ordinary self-evident accounts such as "I had a flat tire" by saying "What do you mean you had a flat tire?" Garfinkel (1967:54) explains that the breaching experiments "modify the objective structure of the familiar, known-in-common environment by rendering the background expectancies inoperative. Specifically, this modification would consist of subjecting a person to a breach of the background expectancies of everyday life". Ethnomethodologists conduct breaching experiments to exhibit that actions are achieved and positioned in order to be comprehended in context. Societal members rely on this to comprehend actions accomplished by other persons and to carry out comprehensible actions themselves (Heritage and Stivers 2014:662).

Researchers have linked CA and ethnomethodology from the beginnings of CA. Schegloff (1995:xxi) states that Sacks in his lectures presented CA and ethnomethodology as both being focused on the 'ordinary,' the 'normal' and 'the mundane' as accomplishments. In spite of the connections, CA and ethnomethodology differ mainly in the relatively limited field of talk-in-interaction and various interactional practices of CA (e.g., sequential organisation, turn-taking, repair organisation), and the wider focus of ethnomethodology on different types of practical reasoning and actions. A major distinction between the two perspectives is the analytical primacy of focusing sequence and next turn in CA. Sequence is significant for the reason that the comprehension of an utterance can be understood in recognition to its placement in relation to utterances immediate before and after. CA and ethnomethodology share the focus on everyday methods and accounting practices through which participants in social interaction identify and locally maintain a common social domain. Ethnomethodology examines any kind of human action but CA only investigates actions manifested through social interaction between humans.

Methodologically, CA uses audio and video recordings of naturally occurring human social interaction. Ethnomethodologists perform breaching experiments, in-depth interviews, participant observation and non-participant observation including videotaped observation focused on detailing the pragmatic steps that establish meaning, i.e., order in everyday interaction. Ethnomethodologists also use "the documentary method of interpretation" (Garfinkel 1967:78), first outlined by Mannheim. Mannheim (1936/1968:78-81, 184-191, 198-202) emphasised that knowledge of and from a special reality is defined by the concrete socio-historical context in which that reality is experienced or known. Garfinkel (1967:40) claims that this is the same method that all social actors employ in achieving everyday activities. A theme in ethnomethodological critiques of conversation-analytic practices is that CA has abandoned the societal member perspective which is the starting point for ethnomethodology (Lynch and Bogen 1994; Hester and Francis 2000a-b; and Watson 2000).

Goffman and the interaction order

Goffman[9] who was the academic advisor of Sacks and Schegloff (Schegloff 1995; Sacks 1995) enthused conversation analysts to study social interaction in its own right. Goffman (1983b) argues that one aspect of social interaction is the characteristic moral and institutionalized "interaction order" which has had an effect on CA (Drew and Wooton 1988; Schegloff 1988). He claims that the "institutional order" encompasses interactive practices and normative entitlements and responsibilities that structure social interaction. The "interaction order" is a self-regulating aspect of social organisation with methodical components that are separate from the characters of human beings such as their biographies, cultures and genders. Goffman elucidates how features of various interaction orders may be utilised by speakers to achieve various goals. He argues that the interaction order brings about the undertakings of social institutions in society such as the family, law, politics, education, religion, and it negotiates the interaction that they accomplish (Goffman 1983b; Drew and Heritage 2006a; Schegloff 2006).

Drew and Heritage (2006a) show that CA implemented Goffman's notion of the "institutional order of interaction" in the discussion of practices in social interaction. Schegloff (1988) has examined the connections between Goffman and CA more in detail. Conversation analytic practices of examining naturally occurring human social interaction and focusing on participants' demonstrated orientations in interaction is analytically and methodologically different from what Schegloff (1988:101, 104) refers to Goffman's analytic "pointillism". Goffman's pointillism contains presenting single examples, frequently invented, and doing interpretations of them. He created conceptual distinctions of typical behaviour rather than showing and examining real human social interaction.

Institutional interaction

This dissertation is a study of institutional interaction. The field of institutional interaction is a branch of CA research that builds on the conversation analytic perspective and initially ethnomethodology (Garfinkel 1967) in regards to how participants form social realities and reconstruct institutions in talk-in-interaction. Conversation analytic studies in the 1960s and 1970s examined for the most part ordinary conversation. The focus on institutional interaction in CA began with the

[9] Goffman 1959, 1961, 1963, 1964, 1967, 1971, 1974, 1981 and 1983a-b.

Atkinson and Drew (1979) study on courtroom interaction (Heritage 2004; Heritage and Clayman 2010). My own institutional interaction area is medical CA[10].

Institutional interaction refers to human social interaction between a professional person (expert) and a layman in occupational environments[11]. Drew and Heritage (1992:3-4) argue that interaction is institutional insofar as participants' institutional identities are somehow made relevant to the work activities. The following are points of theory of institutional interaction and a discussion of this theory in relation to the analysis of medical emergency calls. Heritage (1997:4) looks at three fundamental aspects of institutional interaction that demonstrate the specific institutional orientations of the participants: (1) institutional goal orientations and tasks which are tied to their organisation relevant identities, for instance, emergency call operators, nurses, physicians and callers in medical emergency calls; (2) participants orient to the particular concerns and restrictions on the types of contributions that can be made in a particular environment, for example, dealing with medical emergency call related issues i.e. ambulance warranting concerns, patient symptoms, past medical histories and emergency events; and (3) participants orient to special inferential frameworks and procedures that are particular to institutional contexts. Questioning, emotion management, risk management and instruction giving are specific procedures of medical emergency call interaction which will be discussed in the empirical chapters of this thesis.

CA, in regards to point (1) above, views identity as an interactionally relevant achievement (Drew and Heritage 1992; Antaki and Widdicombe 1998; Aronsson 1998; Auer 1998; Moerman 1993; Sidnell 2003; Heritage 2005). In the research on identity in interaction, Maynard and Heritage (2005) have, for instance, exhibited that the identities of "well" and "sick" are constructed, contested, and accepted within the context of medical interviews. Greatbatch and Dingwall (1998:131) look at how parties of social interaction "invoke and accept or contest the relevance of identities on a moment-by-moment basis". This identity construction process is indexical and occasioned which means that it is only understandable in its local interactional context. Identities are made relevant for the participants and oriented

[10] Medical CA research explores, for instance, the sequential patterning of primary care visits between physicians and patients, the presentation of concerns by patients, how physicians convey "on-line" notes on what they are doing in the case and the way medicines are prescribed by physicians. Medical interaction studies include, for example, ten Have 1989, 2001; Heath 1981, 1982, 1984, 1985, 1986, 1992; West 1983, 1984a-b; Frankel 1982, 1983, 1984; Heritage and Sefi 1992; Maynard 1991; Clavarino, Najman and Silverman 1995; Heritage and Lindström 1998; Heritage and Stivers 1999; Freebody et al. 2002; Maynard and Heritage 2005 and Heritage and Maynard 2007. Previous studies of medical consultations have enlightened researchers of aspects of medical talk including the "genre" (ten Have 1989) of the consultation, how physicians mark their movement between different activities within the consultation (Robinson and Stivers 2001) and how the gaze of medical practitioners may have consequences on the interaction (Ruusuvuori 2001).

[11] Heritage and Clayman 2010; Atkinson and Drew 1979; Zimmerman and Boden 1991; Drew and Heritage 1992; Peräkylä 1995; Heritage 1997, 2005; Drew and Sorjonen 1997; Arminen 2000; Landqvist 2001; Nordberg 1999 and Adelswärd 1995.

to by them. Having an identity means consequences in the interaction entitling, encouraging or discouraging contributors in the interaction to perform or not perform actions (Antaki and Widdicombe 1998). Built on Heritage (1997), Figure 1 exhibits particular dimensions of medical emergency call interaction which will be discussed in chapters 5-8.

Figure 1
Dimensions of medical emergency call interaction

Institution-relevant identities in medical emergency calls include emergency call operator, nurse, physician, emergency medical dispatcher, caller and patient. Restrictions of allowable problem types in medical emergency calls are routinely related to acutely ill and injured patients that can warrant ambulance assistance. Medical emergency calls are goal- and task-focused interactions between call-takers and callers based on the request for help (routinely a request for ambulance assistance) and response sequence. Medical emergency call management is divided up into the two basic tasks of call handling and dispatching ambulance teams. A basic inferential framework in medical emergency calls is the Medical Index of the emergency control centre that call-takers use when questioning and instructing callers, collecting information and making decisions about emergency events. Specific practices in managing medical emergency calls include questioning, emotion management, assessment, risk management, instruction giving and decision making.

In the first part of this chapter, I have reviewed CA as an approach and compared CA to three other sociological perspectives: the phenomenology of Schütz, the ethnomethodology of Garfinkel and Goffman and his stance towards the interaction order. Conversation analysts examine patterns of human social

interaction that form proof of regular usage and may be recognised as "interactive practices". I have also introduced dimensions of medical emergency call interaction that I will analyse further in the empirical chapters of the investigation.

Past research on emergency calls

Emergency calls have been investigated within the research field of institutional interaction (Whalen 1990; Heritage and Clayman 2010; Raymond and Zimmerman 2007; Whalen and Zimmerman 2005; Drew and Heritage 1992; Bergmann 1993; Sharrock and Turner 1978). CA, ethnomethodology and ethnography have been crucial for the development of interactional studies of emergency calls. The genesis of CA in the 1960s stems from Sacks' analysis of audio recorded telephone calls to a psychiatric help-line at the Centre for the Scientific Study of Suicide (SPC) in Los Angeles. In 1963-1964, Sacks worked at SPC as a researcher with Garfinkel (Schegloff 1995). Schegloff examines police call openings in his doctoral dissertation (1967) with data from the Disaster Research Centre at The Ohio State University in 1964-1965.

One central feature of institutional conversation is the overall shape of the interaction. The organisation and the overall structure of American police and 911 emergency calls have been discussed in detail in other studies[12]. It is adequate for present purposes to observe that American emergency calls can be viewed in the following phase structure described by Zimmerman (1984:214): (1) opening with an identification and/or recognition sequence, (2) request, (3) interrogative series, (4) response to request and (5) closing[13]. These phases compose the call in organised segments each of which has its own distinct characteristics. Zimmerman (1992b) describes the specialised turn taking system of emergency calls based on sequences of questions, answers and verifications. Call-takers design questions in order to elicit emergency relevant information. Callers construct emergency call relevant answers in order to comply with the particular turn taking system in this type of institutional interaction. Heritage (1984:238-40) claims that interactional practices in human social interaction can be used in "specialised" and "reduced" forms. Whalen and Zimmerman (1987:175) observe that the four-part opening sequence found in ordinary telephone conversations (Schegloff 1986) is "reduced" and "specialised" in a way that adapts the organisation of telephone call openings to the special requirements of emergency calls (Zimmerman 1984:47). Emergency

[12] Schegloff 1967, 1995:xxi; Zimmerman 1984, 1992a-b; Whalen 1990; Whalen and Zimmerman 1987, 1990; Whalen, Zimmerman and Whalen 1988; Whalen and Zimmerman 2005; Raymond and Zimmerman 2007, Meehan 1983. Previous research has also been carried out on British emergency calls by Sharrock and Turner (1978) and Canadian emergency calls by Eglin and Wideman (1979).

[13] Sacks 1995:364.

calls are specialised by the task orientation and the focus on granting or rejecting emergency service.

Research on Swedish emergency calls between emergency call operators and callers has been conducted earlier (Hedman 1997; Nordberg 1999; Osvaldsson et al. 2006, 2013; Cromdal et al. 2007a-d, 2008a-b, 2012a-b and Persson-Thunqvist et al. 2008). Cromdal et al. (2012b) and Landqvist et al. (2012) examine procedures for opening emergency calls. Nordberg (1999) researches closings in Swedish emergency calls between emergency call operators and callers arguing that the key point in emergency calls is the promise of action and that the closing segment follows social structures regulating closings in other types of interactions.

Zimmerman (1992b:445-448) and Whalen et al. (1988) have researched repairs of interactional troubles in American emergency calls from conversation analytic and ethnomethodological perspectives. In one of the problematic calls between a call-taking nurse and a private caller, the arrival of medical assistance was delayed. A disagreement between the nurse and the caller who had requested an ambulance for his dying mother resulted in the collapse of the emergency call. The result was that the dispatch of ambulance assistance was delayed. Whalen et al. (1988) analyse this emergency call in order to understand how the interaction broke down.

Osvaldsson et al. (2006, 2007) examine comprehension checks, clarifications, and corrections in an emergency call with a non-native speaker of Swedish. Cromdal et al. (2012a) present a case study of an emergency call with a 12-year-old girl who is audibly not a native speaker of Swedish. The findings shows two interactive practices through which the call-taker and caller achieve mutual understanding. The first is the participants' orientation toward possible or projected problems of comprehension and should consequently be understood in terms of preemptive management of mutual comprehension. This is carried out by either participant (a) making certain that the other person has understood; (b) checking the adequacy of one's own comprehension; and (c) exhibiting one's own comprehension without requiring a confirmation by the other party. The second practice are repairs employed to handle problems of understanding including: (a) repeating and paraphrasing previous turns or their problematic segments; (b) finding alternative ways of talking about noticeably non-understood details; and (c) delaying such problematic interaction.

Past research on questioning in emergency calls

Questioning is pervasive in emergency calls. This section provides an overview of findings in past research on questioning in emergency calls. Zimmerman (1984, 1992a) exhibits that call-takers and callers in emergency calls are engaged in call-taker directed interrogation chains in order for call-takers to decide to grant or decline emergency assistance. An extended insertion sequence in the form of the "interrogative series" or a succession of questions and answers is placed between the caller's request for emergency assistance in the beginning of the call and the call-taker's response to this request by a granting or a rejection in the end of the call which is also a fundamental goal orientation of the call-taker.

Questions in the interrogative series of emergency calls are related to call-takers' hearing, understanding or acceptance of the emergency assistance requests delivered by callers. Earlier studies have described patterns in the interrogative series of emergency calls, the opening turn shape which is formulated to decide the character of the emergency as early as possible in the call and the interrogation and clarification activity through repairs and verifications by repeating previous turns mainly addressing locational information (Whalen and Zimmerman 1987; Zimmerman 1992a-b; Hedman 1997; Wakin and Zimmerman 1999).

Health-related questioning and answering in emergency calls have only received minimal attention in earlier research. Past studies on the interrogative series has primarily described emergency calls in which callers request police or fire services. Few studies have investigated emergency calls when callers request ambulance assistance. The questioning series in medical emergency calls in which callers request ambulance assistance is primarily about deciding if the described problem is an ambulance assistance warranting problem, determining the health condition of the person in need of help and identifying the location of the occurrence (Fele 2008; Hedman 2012; Paoletti 2012). Hedman (2012) identifies recurring patterns of how questions are designed in Swedish medical emergency calls. Regularly, health-related questions are formulated as a statement of a need for information ("Has he previously experienced these kinds of problems?") and as an explicit question (''can you see if he is breathing?").

Cromdal et al. (2008b) have examined how call-takers perform diagnostic interviews in medical emergency calls through which call-takers verify health and injury states of patients. Their results demonstrate that symptom descriptions are favoured prior to diagnostic accounts. Children are more cautious compared to adults about employing diagnostic accounts when describing emergencies. When emergency call operators carry out questioning about states and symptoms of patients children give more information than adults do.

Cromdal et al. (2008a) reveal how young callers in co-operation with emergency call operators produce appropriate, sufficient and detailed accounts of emergencies. The investigation demonstrates how emergency call operators employ diverse discursive techniques to steer the call in the direction of the emergency call operator's questioning agenda. Cromdal et al. (2007d) observe in a study of when children call the Swedish emergency number that less than half of the children answer the initial standard question about what has happened. The shape of the children's first turn in the emergency is usually a request for fire service or an ambulance. "Request openings" (Cromdal et al. 2007d:28) of this type are twice as common among children compared to the youth and adult calls in their material. Cromdal et al. (2007d:28-29) suspect that many children do not answer the emergency call operator's initial question because the formulation "what has happened?" is difficult to grasp for the children. Another possible explanation according to the authors is that children often call the emergency number after an adult has been instructing them to do so. Consequently, the children deliver the ambulance assistance request in the first possible position in the call, i.e. in their first turn. The authors state that normally it requires that the emergency call operator repeats the question before the calling child presents the problem.

Callers may not want to answer questions in emergency calls. Resistance to the questioning series (Tracy 1997; Whalen et al. 1988) has been extensively researched in the emergency call literature. A possible basis of disaffiliation is when callers are unsatisfied with questions that call-takers ask in the ''interrogative series'' (Zimmerman 1992b). Callers are often not aware of the institutional reasoning that motivates questions that call-takers formulate and may view questions as irrelevant and perceive the interrogation as suspending or obstructing the sending of emergency assistance (Heritage and Clayman 2010).

Tracy (1997) describes this kind of frustration by the callers' orientation to the customer service frame. Callers do consistently not understand that they are expected to give reasons for their requests for emergency assistance. Resentment may be initiated when call-takers openly or indirectly question reports or requests for assistance delivered by callers. Call-takers may be doubtful when assessing event reports by callers regarding the necessities of a sufficient description and the caller's perceptual access to the events and social positioning towards them i.e., the epistemological stance of the caller (Whalen and Zimmerman 1990). The request for assistance may also be vulnerable to doubt concerning its institutional relevance status as a legitimate medical condition (cf. Heritage and Robinson 2006). Doubt may be expressed implicitly by repeated requests for confirmation or clarification, or explicitly by requests for accounts of the perceptual and epistemic basis of the report (Jönsson and Linell 1996; Landqvist 2001).

In chapter 5, I will discuss health-related questioning construction in medical emergency calls carried out by physicians, nurses and emergency call operators. In physician-patient consultations physicians may use selected questions to help form

diagnostic hypotheses by seeking the characteristics and chronology of the symptoms. These questions are most likely to be constructed as yes-no questions which establish the action agenda for answering within the constricted boundaries of "yes" and "no" detecting the existence of particular symptoms (Heritage and Clayman 2010). These types of questions are also called "polar" questions (Roter et al. 1997). Bolinger (1978:104) argues that a polar question "advances a hypothesis for confirmation". Raymond (2003) has demonstrated that yes-no questions establish agendas for yes-no responses in which the lexical items "yes" and "no" should appropriately be placed as the first component in an answer. Using alternative questions makes relevant a response in which the respondent repeats one of the delivered response choices and expansion is discouraged (Stivers 2010). Open-ended questions in doctor-patient interaction have been investigated in past research by, for example, Cohen-Cole 1991; Coupland et al. 1994; Frankel 1995 and Swartz 1998.

A recurring practice in the questioning phase of medical emergency calls is history taking. Boyd and Heritage (2006) and Heritage and Clayman (2010) have explored aspects of questioning during history taking in American primary care consultations between physicians and patients exhibiting that questions from physicians are not neutral or objective. Instead the questions create topical and action agendas and express presuppositions of the participants about the states of affairs to which they are oriented, epistemic stances (knowledgeable and unknowing) and preference organisation of questions "preferring" a response of special type about concerns of patients. Heritage (2002) and Boyd and Heritage (2006) have presented the principle of optimisation in medical questioning which is formulated in order "to allow patients to confirm favourably framed beliefs and expectations about themselves, their health and their circumstances" (Heritage and Clayman 2010:144).

Boyd and Heritage (2006) emphasise the principle of recipient design in medical questioning. Recipient design refers to the "multitude of respects in which the talk by a party in a conversation is constructed or designed in ways which display an orientation and sensitivity to the particular other(s) who are the coparticipants" (Sacks et al. 1974:727). Stivers (2007) argues that physicians in acute care visits should display the principle of problem attentiveness which refers to that if a patient describes a particular symptom, then the physician is expected to compose questions that are largely consistent with that symptom and designed to assume that there is a problem (Stivers 2007).

In sum, two characteristics of previously researched questioning practices in emergency calls discussed in this section include: (1) the call-taker orientation in the questioning activity to make a decision if the reported condition of the patient or event is an emergency assistance warranting problem; (2) and determining the health condition and symptoms of the person in need of emergency assistance. Two features of caller responses in emergency calls are that: (1) callers usually respond with

reports, descriptions and direct or indirect requests to emergency problem presentation requests by call-takers and (2) callers may also express resistance to the questioning series which will be discussed further in chapter 5.

Sociology of emotions

Emotions are researched from various perspectives in sociology (see for instance, Stets and Turner 2006). In the history of the sociology of emotion Simmel (1921/1971, 1917/1950:34-36) emphasised the significance of emotion in social-collective behaviour. Goffman (1961) argued that emotion regulation is a continuous task for participants in interaction. Hochschild (1983) turned the sociological spotlight on emotion arguing that feelings and emotions have strong significance to societal processes. In sociology emotion is often employed as a general term that incorporates other labels, including feeling and affect (Hochschild 1979; Sandlund 2004; Turner and Stets 2005:1-2). Hochschild (1983:57) views emotions as work emphasising the feeling rules that determine emotion. She demonstrates how emotion is a socially structured, patterned way of feeling and of acting on feeling. Hochschild (1983) investigates emotion labour and external controls of inner states.

A central analytical criterion in CA (that will be discussed in chapter 4) is procedural consequentiality (Schegloff 1992:111) which refers to that conversation analysts must be able to demonstrate how social context such as an identity, setting or other contextual details have determinate consequences for the partcipants in conversations. In analysing emotion management from a conversation analytic perspective, it is vital to show that participants of interaction orient to some features of interaction as affective (Local and Walker 2008; Edwards 1999). In conversation analytic studies, emotion and affect are often employed interchangeably (Ruusuvuori 2014:331-332). Ruusuvuori (2014:347) argues that conversation analytic research on emotion and affectivity views "emotion as social display that is co-constructed and thus emerges as observable in specific situations in talk-in-interaction". Ruusuvuori (2014) presents different ways emotions emerge in conversation: (1) Emotion displays as consequential for interaction; (2) emotion as a co-constructed interactional resource; (3) emotion as a vehicle in performing institutional tasks; and (4) displays of emotion as an interplay of different modalities using the case of facial expression in relation to spoken interaction. Ruusuvuori (2014:332) argues that emotional dimensions of interaction including laugh tokens, emotional tones of voice, affective lexical choices or facial expressions, are interwoven with talk and create a significant resource for understanding actions as emotional in human social interaction.

Past research on managing emotions in emergency calls

Emotion management in medical emergency calls has received minimal attention in past interactional research. In my conversation analytic understanding of emotion management, I am mainly interested in social displays of emotions, how emotions arise in medical emergency calls and how call-takers manage callers' emotions and not emotions as individual experience. The analytic focus in chapter 6 is on the ways emotional displays are initiated and used by callers and how call-taker respond to these emotional expressions. As Peräkylä and Ruusuvuori (2006) have demonstrated the emphasis is not on the individuals and their emotional messages and intentions that participants of interaction communicate, but rather on the manners in which emotional displays are used and treated in spoken interaction (Ruusuvuori 2014:333). The attention shifts from the essence of emotions to how they arise and how they are handled in interaction (Heath 2002; Hochschild 1983; Whalen and Zimmerman 1998; Wilkinson and Kitzinger 2006; Ruusuvuori 2014).

Tracy and Tracy (1998) carried out an ethnographic study based on participant observations and interviews of the different ways human feelings are understood, expressed and managed in an emergency control centre. The investigation is a description of the emotional landscape of the centre, the emotion rules of the organisation, and the communicative methods call-takers use to handle their own emotions while channeling callers' emotions (anger, hysteria and other types of feelings) in order to keep callers on the phone to collect relevant emergency details. They use the term "double-faced emotional management" to refer to the emotion work of call-takers when they calm themselves and at the same time calm callers. Call-takers are expected to be calm and professional according to the call-taker training manuals which presents rules such as not getting emotionally involved, angry or excited. Instead they should show interest and care through tone of voice when talking to callers. Tracy and Tracy emphasise the significance of a working environment for call-takers that allows practices such as evaluative talk off the phone, joking and sharing experiences, in order to release stress, anger and anxiety.

Svensson (2012) explores aspects in how call-takers make decisions in Swedish emergency calls. He describes that call-takers rated callers' emotional expressions, the level of intensity and ambulance assistance need. Svensson makes an experiment, using a speech sample from authentic emergency calls to find out whether expressed emotion and intensity contribute to the perceived need for ambulance assistance and exhibits that the interpretation of emotional expressions in callers' voices can trigger modifications of the triage routine being used.

Based on Tracy and Tracy (1998) Svensson (2012) exhibits that call-takers have developed specific emotional management strategies in order to deal with both callers' and their own emotions. Various strategies were observed including: (1)

hiving (choosing and altering) calls, (2) expanding on (by using attention and reshaping or reappraising) content of calls, (3) auralizing (by externalizing an emotional obstruction) and (4) taming emotional expression (by regulating expressions of emotions). Additionally, he focuses on how call-takers make decisions and use intuitive and emotional competences to supplement or challenge rational features of the decision support systems. His thesis demonstrates that particular emotions arise more often than others and that the level of intensity of expression contributes to the perceived help needed. Call-takers were found to use rational and formal routines as well as non-formal, intuitive and emotionally based, individual routines in order to make decisions.

Whalen and Zimmerman (1998) examine the management of panic within calls to the American 911 emergency number. The centre of attention of this investigation is how "emotional displays" (Whalen and Zimmerman 1998:142) including crying or screaming are handled by call-takers in order to collect necessary information from callers. Whalen and Zimmerman (1998) observe emotion management in American emergency calls. They investigate how callers exhibit emotions in emergency calls within the sequential organisation of spoken interaction which aids routine work procedures. They study how emotional expressions are embedded in local interactional contexts, and as a result how they attain significance. Heritage and Clayman (2010) analyse the role of human emotion in the structured work environment of emergency calls. They describe that calls for help entails "the regulation and suppression of emotion in the service of a practical task" (87).

Paoletti (2012) examines from a discourse analytical perspective how call-takers handle callers' sense of urgency in calls to the Italian medical emergency number. She exhibits that interaction in emergency calls is frequently agitated and callers practically constantly communicate with a sense of urgency. Call-takers usually have to struggle to make callers collaborate. The questioning in emergency calls is often viewed by callers as a problem and a way of postponing emergency aid, often making callers angry and annoyed. Paoletti (ibid.) states that swearing, impoliteness, face attacks and interrupted calls are common in emergency calls. The emphasis of her study is on how call-takers handle callers' worry and sense of urgency and feelings such as anger. These described features of the social display of emotions in past research of emergency calls are also relevant in my analysis of managing emotions in medical emergency calls in that call-takers routinely maintain a calm state and manage callers' social display of emotions in Swedish medical emergency calls. The analysis in chapter 6 also contributes to the emotion management literature by discussing the interactional consequences on social displays of emotion by callers when call-takers grant ambulance assistance, present solutions to problems of callers, and emphasise the positive to create hope for callers.

Risk perspectives in past research

Managing risk is a core feature of medical emergency calls. This section provides definitions of risk and explore some of the theoretical dimensions of risk. I provide a brief overview and critical reflection of conclusions in earlier studies about the issues of risk and the practice of risk management in sociological, medical discourse and conversation analytic studies. After this overview I contrast features of risk management in medical emergency calls with risk dimensions in past research.

There is a wide-ranging literature elucidating the varied insights of risk within society. Risk concepts make a distinction between reality and possibility (Renn 1998). Renn (1998:51) defines risk as possibility or experience of possibility that human action or other events lead to consequences that have an impact on something that is valued by people. The risk is related to something, the risk of experiencing, for instance, an accident or a stroke. Risk may be an accident or a crisis before it has happened. The term "risk" is by definition complex. It is used as a synonym for both harm and probability making little difference between actions and consequences. Oxford Dictionaries (2016) define risk in numerous ways as an event involving exposure to danger; the possibility that something unpleasant or unwelcome will happen; a person or an object regarded as a threat or likely source of danger; exposing someone or something valued to danger, harm, or loss; acting in such a way as to bring about the possibility of an unpleasant or unwelcome situation; and experiencing the chance of unfortunate consequences by engaging in an action.

Sociological perspectives on risk

Risk has been researched in a number of ways in sociology. The concept of risk became widely discussed in the 1980s with the nuclear-disaster of the Three Miles Island nuclear reactor (1979); the Bhopal tragedy (1984) and the Chernobyl catastrophe (1986). Risk is still a fundamental dimension of the global risk society with ongoing crises and disasters, for instance, related to wars, migration, refugee crises, terrorist attacks and fast spreading illnesses including Ebola, HIV/AIDS, the SARS outbreak and swine flu.

This review of sociological risk studies exhibits diverse perceptions of risk within society exploring ways of comprehending risk discourses that identify "risk" as a central concept in modern society and the management of risk as fundamental to "neo-liberalism" or "advanced liberalism" (Hayek 2001; Castel 1991; Rose 1993; Dean 1997). Beck (1992) suggests that we live in a "risk society". Risk society is the way in which contemporary western society organises itself in response to risk. Beck (1992:21) defines risk as a systematic way of dealing with hazards and insecurities produced by modernization itself because development in industry and

science threaten humans and the environment, for instance, as the Chernobyl catastrophe demonstrates. Risk society may be viewed as "the global expansion, awareness, and impact of risk and of the insecurities and anxieties it produces in society" (Dillon 2014:519). Criticism of Beck is that the concept of "risk" in his risk society perspective is narrowed to the responses of technical and environmental risks as unforeseen consequences of industrialization. Japp (2000) critiques this notion of a danger-consequence society because it fails to grasp the more general societal change regarding the concept of risk as a particular historical strategy to manage uncertainties.

Giddens argues in a similar way as Beck in his discussion of the "risk culture" of late modernity in which humans cause dangers. Giddens defines risk society as a society preoccupied with the future and safety, which creates the concept of risk (Giddens 1991:3). Giddens and Beck claim that in pre-modern society natural disasters, plague or famine were usually perceived as being caused by non-human forces. Modern societies, are also exposed to risk such as pollution, illnesses, crime, that are the result of the modern society process itself. Beck (1999) and Giddens (1999b) assert that it is possible for societies to assess the level of risk that is being produced, or that is about to be produced. This sort of reflexivity can in turn alter the planned activities themselves. This increased critique of modern industrial practices is said to have resulted in a state of reflexive modernization, illustrated by concepts such as sustainability and the precautionary principle that focus on preventative measures to decrease levels of risk.

A sociocultural risk analysis that was developed to understand different logics of risk as they are expressed in social groups or organisations is the risk and culture approach of Douglas (Douglas and Wildavsky 1982, Douglas 1985, Thompson et al. 1990) which is based on earlier research by Douglas on how danger and contamination were socially constructed (Douglas 1966). Douglas views risk as a socially produced interpretation and reaction to dangers that is appropriate for modern society while Beck shows how the circumstances of late modernity construct a special type of hazard and risk that persons respond to in personalised and reflexive ways.

Similar to Beck and Giddens I look at the management of risk within society but the existing risk research literature in social sciences deals mainly with risk at an abstract and macro-historical level and specifically fails to deal with risk in human social interaction on a micro level. Beck and Giddens viewing risk on the level of society and systems may create an individualistic, rationalistic and over-generalized model of human actors. The risk studies on the level of society are empirically unspecific and do not concern concrete human interaction. In contrast, my sociological analysis of risk management in medical emergency calls is focused on how risks are handled on an empirical, practical, interactive level in telephone calls between emergency call-takers and callers. My study thus fills a gap by being an empirical study of a socially specific phenomenon demonstrating risk

management practices in the details of the institutional interaction and organisational contexts of medical emergency calls.

Medical discourse and conversation analytic research on risk

Conversation analytic research on risk interaction is rare which makes further research on risk practices in human social interaction important. The analysis of managing risk in medical emergency calls in chapter 7 is a significant contribution to CA and to the field of institutional interaction describing the ways emergency call-takers and callers carry out risk interaction and make sense of emerging risks before making risk decisions. A study on AIDS counselling by Silverman and Peräkylä (Silverman 1997; Silverman and Peräkylä 1990) offers an account of how pauses, hesitations and false starts can be employed to mitigate possible face threats connected to imputing "at risk" identities, for instance, a drug addict or homosexual identity.

A number of medical discourse analytical studies have examined risk. Medical discourse analytical research on risk is mainly about evading injury and loss in health care delivery. "Risk discourse" can mean both talking about risk, for instance, medical risk and generating risk in talk. Adelswärd and Sachs (1998) argue that in the field of medical science, risk is part of cognitive comprehension and not a bodily state or process but it is sometimes talked about as if it were. They claim that risk discourse may in itself be risky. Consequently, speaking to patients about risk is a sensitive issue. Risk talk may seem needed for patients to acquire knowledge that may encourage them to make decisions and take measures to go through medical treatments or lifestyle changes. Informing patients about risk may also cause anxiety and illness. Linell et al. (2002) argue that conversations about diseases, diagnoses, and risk may cause worry, psychosomatic symptoms, and the subjective experiences of disease. Matters such as certain lifestyle questions may be intimidating to personal integrity and for that reason interactionally sensitive (Adelswärd and Sachs 1996; Linell and Bredmar 1996).

Linell et al. (2002) compare risk discourse in five different health care settings in which at least the professional orients to risk in the interaction: (1) genetic information talks where an expert in genetics talks to a patient who suspects that the patient is at high risk of having cancer because of hereditary reasons (Adelswärd and Sachs 1998); (2) health information discourse where a nurse speaks with a male client who has, or has had, or may develop, high cholesterol values (Adelswärd and Sachs 1996); (3) booking interviews in maternal health care where a midwife talks to a pregnant woman about a test to be handled later which (if the woman decides to take it) can show fetal anomalies (Linell and Bredmar 1996); (4) medical testing events, routine medical check-ups that are regular parts of midwife and pregnant

woman meetings when the professional is concerned with occurrences in which physical or physiological measurements and test results are conveyed and evaluated (Bredmar 1999; Bredmar and Linell 1999); and (5) discourse during urography and kidney radiography where a nurse and a patient converse during a kidney X-ray examination and talk before and during the nurse administration of an intravenous (and potentially risky) injection of contrast fluid (Lindstedt 1997).

The medical discourse researchers discuss these five health care environments in regards to how conversational participants orient to relevant risks. In the genetic information talks risk get talked about in individualized ways. Risk tend to become concretized and nearly reified as if risk was something "carried" by the patient in her or his own body. This consequence is also produced by the clinicians' use of combinations, for instance, "risk organ, risk-person, high-risk-person, risk-family, risk-distance, risk-zone," (Adelswärd and Sachs 1998). In the health information discourse, the participants seldom mention the word risk. However, they talk about numerical test values and numerical "limits" which implicate a risk perception. In a few talks, the lexical item risk is employed but not with such exact measures as in the genetic information discourse.

In the booking interviews with the expectant mothers, clients are all healthy. It is then no reason to assume that they are subject to increased individual risks. But midwives routinely bring up the topic of the optional AFP test. In some meetings (predominantly with first-time mothers) there is explicit talk about fetal anomalies. Risky aspects are mitigated or minimized in this discourse type and the midwives never uses the word risk. Kidney X-ray examinations contain certain risks for the reason that a few patients may develop strong and rapid allergic reactions to the contrast fluid and a risk of suffocation. The nurses deliver questions about allergic dispositions that are motivated by the medical risk. Risk in this context motivates queries. At the same time, the topical aspect of risk is totally concealed. The nurses never mention risks.

In sum, these medical discourse analytical studies understand risk discourses that identify "risk" as a mainly linguistic and interactive phenomenon without contextualising further how the organisational contexts restrain the risk management practices. In chapter 7, I discuss risk management in medical emergency calls as practical risk response work when emergency call-takers and callers interact with acute care risk orientations to varying and more or less unpredictable injury and disease progressions and future scenarios.

Past research on instruction giving and advice-giving in institutional interaction

In this section, the research problem instruction giving in medical emergency calls is specified in relation to past conversation analytic research about instruction giving and the related practice of advice-giving in other types of institutional interaction. I begin by explaining the meanings of instruction giving and advice. This is followed by an introduction of past research on instruction giving and advice-giving interaction that is relevant for the analysis in chapter 8. Three characteristics of instruction giving are discussed: normativity, asymmetry and the future orientation of the participants in instruction giving interaction.

Nationalencyklopedin[14] defines instructing as "assigning the appropriate approach" and an advice as a "proposal about an appropriate procedure". It is thus not possible here to give a more exact definition of what the practice of instruction giving is in Swedish medical emergency calls. Instead the clarification of what instruction giving is about in this institutional context will materialise in chapter 8. What we perceive as instruction giving is dependent on interrelations between its position in the interaction in relation to other activities, the overall call context and its forms. In the analysis in chapter 8, I emphasise that what is instruction giving is related to the conversational context that the participants orient to when interacting.

CA research on the practice of instruction giving concentrates on the significance of the interactional context for how contributors in conversations initiate, deliver, interpret and respond to instructions. Also the extent to which instruction providers orient to and integrate outlooks and preferences of recipients seems to impact responses to instructions, i.e., complete or some degree of acceptance or refusal. CA and ethnomethodological research on instruction giving in telephone interaction includes Zimmerman (1992b:428-431) examining instruction giving in American emergency calls to the police. He presents how call-takers give instructions to callers when emergency assistance units are on their way to emergency sites.

Baker, Emmison and Firth (2005:73, 78) demonstrate that technical support calls are characteristically controlled by call-takers giving real-time instructions to callers on what to do to correct software-related problems. Call-takers do this is in a step-check, step-check format for instructions which is a conditional, situated use, and differs from call to call. Call-takers shape instructions in relation to the hearable competence of each caller using reflection.

Murtagh (2005) performed an ethnographic study in a mobile phone call centre in the United Kingdom. He discusses aspects of instruction giving sequences in a mobile phone helpline. Murtagh demonstrates how formulations and repair slots

[14] Nationalencyklopedin, instruera.http://www.ne.se/uppslagsverk/ordbok/svensk/instruera 4th December 2015.

make it possible for call participants to organise the transfer of instructions and decide the structure of the overall instructional structure in telephone calls for help.

I will also introduce past CA research on the closely related interactive practice of advice-giving. In advice-giving the professional "describes, recommends, or otherwise forwards a preferred course of future action" (Heritage and Sefi 1992:368). Waring (2007:367-368) argues that advice-giving refers to a wide range of social actions extending from making a direct correction to delivering a long-term solution. The shapes of advice, their placement and responses vary between different local interactional contexts. CA has been used to look at advice-giving interaction in ordinary conversations (Jefferson and Lee 1981) and institutional interactions (for an overview see Limberg and Locher 2012).

Advice has been characterised as normative and asymmetric in conversation analytic research on advice-giving (Drew and Heritage 1992; Butler et al. 2010). Heritage and Sefi (1992) argue in a study of health visitors and first-time mothers that advice is normative in that it forwards a favoured progression of future action that the receiver is expected to carry out. Norms are routinely observed in the reactions to when participants in conversations breach social norms (Garfinkel 1967). For instance, is not answering a question non-normative. Svennevig (2012:1411) analyses the normative expectations of the caller assuming that the emergency call-taker will grant an ambulance when the caller requests ambulance assistance and the damaging results of breaching social norms in Norwegian emergency calls.

Advice delivery usually displays the epistemic asymmetry between the advice giver and the addressee as its fundamental feature (Hutchby 1995). The offer of advice "assumes or establishes an asymmetry between the participants" (Hutchby 1995:221), in that the advice-giver is routinely viewed as the authoritative speaker and more knowledgeable than the addressee. Silverman's (1997) study on advice-giving in interaction between HIV counsellors and their clients argues that HIV counsellors offer advice with an "institutional mandate".

Leppänen (2008b:110) discusses five organisational conditions that establish power relations between telephone advice nurses and callers: (1) the caller has limited opportunities to choose where to look for help; (2) the caller has restricted access to the telephone advice nurse; (3) the caller may also have a limited access to physicians and other caregivers; (4) the asymmetric distribution of knowledge about the medical care organisation and (5) that the telephone advice nurse and the caller are objects of organisational exercise of power regarding what cases that the organisation should handle and what measures to take. These organisational conditions are also found in power relations between emergency call-takers and callers in Swedish medical emergency calls. An additional feature in medical emergency calls is the systematic surveillance of call-takers in medical emergency call operations which will be discussed in chapter 4. Asymmetry is negotiated in

advice-giving on the basis that clients also may be more well-informed than call-takers on many aspects of the interactions (Heritage and Sefi 1992; Waring 2007).

Research has shown that advice-giving always has a future dimension (Landqvist 2001). It is then not about the contents of the advice-giving but how call-takers in specific environments interactively give advice in order to increase the probability of client compliance. Landqvist (2001) investigates advice-giving in calls to the Swedish poison information centre between pharmacists and callers with a focus on morality and conversational strategies. A particular type of directive in his study is just-in-case directives (Landqvist 2001:140-141). They are offered after the main directive and are focused on "what to do in the worst possible case. This is a way of making sure that appropriate measures will be taken in case the symptoms become worse." (222-223). Just-in-case advice-giving is placed after that the pharmacist has given calming information that the event is not dangerous with implications that the affected person can stay home or with a similar result. The characterising feature for those types of sequences is that they are initiated with a condition which is followed by the directive. In-case advice-giving is placed in the end of calls after a main advice resulting in relatively limited treatment measures (Landqvist 2001:141). It is initiated with a condition about how the caller should act if the reported case is becoming more serious than what has been talked about in the call.

The analysis in chapter 8 will display that just-in-case instruction giving occurs in Swedish medical emergency calls. In medical emergency calls the situation is routinely very serious from the start of the calls. The just-in-case instruction giving in medical emergency calls may be given to prepare callers to perform measures on patients in case their conditions become worse. Future oriented instructions build on knowledge about typical processes and events. Both poison information operators and call-takers at the emergency control centre have past knowledge about what can happen in the calls, that is, typical processes.

Advice-giving distribution in human social interaction has shown to be successful when the participants perform it through a stepwise interactive procedure (Heritage and Sefi 1992; Jefferson and Lee 1981; Maynard 1991). A routine pattern in institutional interaction is that professionals give advice in an indirect manner. Most probably to increase the receivers' readiness for advice or facts, advice-giving providers prefer to be indirect instead of direct in the advice-giving practices (Maynard 1991). Advice providers first bring about the viewpoints of the recipients on the conversed topic and then design the advice in relation to the given information (Erickson and Shultz 1982). This is achieved as a gradual procedure into advice-giving. The practice involves three steps: (1) the speaker elicits the orientation of the listener; (2) the listener shows that she or is oriented to the speaker; and (3) the speaker offers an advice (Erickson and Schultz 1982; Maynard 1991).

Leppänen (1998a) examines advice-giving interaction between Swedish district nurses and patients. The contents of advice-giving in nurse-patient interaction are about patients' daily management of medical problems. He observes

that patients initiate advice-giving verbally by: (1) proposing courses of action; (2) detailing problems within topical environments already established by nurses' questions; and (3) detailing untoward states of affairs. Non-verbal methods of initiating advice-giving are comprised of: (4) displaying parts of their bodies to nurses (191-194). Nurses initiate advice-giving by observing a problem by visual inspection or by listening to talk by patients (205). Leppänen (1998a:205) detects that nurses begin advice-giving directly after a problem has been manifested, when patients and nurses discuss details of a trouble before nurses start to give advice, when nurses delayed advice-giving up until additional facets of patient problems had been talked over, and when advice-giving is commenced after the accomplishment of other activities that are not connected to the problems.

Concerning the delivery of advice-giving in nurse-patient interactions, Leppänen (1998a:207-211) differs between four shapes of advice-giving: (1) imperative mood; (2) verbs of obligation; (3) presenting advice as an alternative and (4) descriptions of patients' future actions. Leppänen (1998a:218-219) explains that action-forwarding parts of advice-giving is regularly followed by accounts, and that these accounts exhibit knowledge on which nurses base their advice-giving. Frequently these accounts or warnings forecast future occurrences, which are expected to follow if advice-giving is not adhered to.

3 Data and methods

Introduction

Chapter 3 is about the methodological choices I made about the interactive practices I decided to examine. Silverman (2000:77, 88 and 300) defines methodology as a "general approach to studying research topics". In the following, I will introduce the data set, methods of data gathering, preparation of data for analysis, transcription and analytic methods used in this research study. The selected data for the study consists mainly of audio recorded medical emergency calls to a Swedish emergency control centre.

The research design of the study included the four phases typical of conversation analytic research projects: (1) audio recordings of spontaneous, naturally occurring medically emergency calls; (2) detailed transcriptions of the recordings; (3) sequential analysis (which will be described later in this chapter) of selected fragments; and (4) reporting of the research (ten Have 2007). The term "naturally occurring interaction" refers here to interactions that are not set up as those that might occur in a laboratory, which would take place with or without the interference of a researcher and in which the researcher has not allocated a specific subject matter to study. I also use ethnographic data and methods including observations, observational field notes and interviews which will be discussed later in this chapter.

Wootton (1989) and ten Have (2007) have discussed conversation analytic methods in the ways empirical materials are collected, how the researcher starts to make remarks about the data and gathers sets of interactive phenomena of investigative importance. The conversation analytic approach is "action-focused" (Drew and Heritage 2006a:xxix). The goal of analysis is to reveal social orders of interactive phenomena with a focus on how they are delivered in particular social contexts (Drew and Heritage 2006a). The endeavour is to discover arrangements and interactive practices which bring about the accomplishment and relevancies of social actions when people interact.

Data set

In this section, I will give a brief description of the data set. The range of data for this dissertation was prepared with the main objective of acquiring a demonstration of social interaction in 112 medical emergency calls in which persons seek ambulance assistance. Consequently, I have not chosen to focus on 112 emergency calls when callers request fire and police assistance in this investigation.

I performed ethnographic fieldwork in an emergency control centre in 1996. The study involved 483 hours of observing in the emergency control centre and 60 hours of audio recordings of telephone calls (of which 82 calls were medical emergency calls) and radio communication contacts to and from the emergency control centre. The majority of the audio recordings of telephone calls and radio communication contacts in my data corpus were 112 emergency calls requesting fire service assistance, telephone advice calls and radio communication contacts between emergency medical dispatchers and ambulance teams. In 82 of these audio recorded emergency calls callers requested ambulance assistance and described medical emergencies. All 82 medical emergency calls have been examined in a CA data analysis for this dissertation[15].

Out of the 82 medical emergency calls in the data corpus the largest groups of incident types were: unconsciousness (11 incidents); respiratory related calls (10); heart related calls (8); falls (6); bleeding (6); pain (5); cramps (epilepsy and MS) (5); childbirth and pregnancy related calls (4); suicide attempts (4); alcohol and drug-related calls (4) and diabetes (2). The other incident types in the medical emergency data only occurred once. The data for the thesis include audio recordings of medical emergency calls from both private (79 calls) and institutional callers (3 calls). The medical emergency call material includes two-party calls (Sacks 1995:289) between emergency call-takers and callers represented by family members, patients or witnesses, and multi-party calls (Sacks 1995:289, 523-534) with emergency call operators, nurses, callers (family member or witness) and patients, and multi-party calls with nurses, physicians and callers.

In 2015, I observed call-takers and co-listened to medical emergency calls in the same Swedish emergency control centre as in the 1996 study. I also interviewed call-takers, emergency medical dispatchers and the emergency control centre manager on the topic of medical emergency call management. A comparison of the data sets in 1996 and 2015 demonstrates that medical emergency calls go about in a similar way in the materials when looking at the contents, the interactive details and the overall structural organisation of the calls. I observed a difference in the opening of the calls. In 2015, emergency call-takers began 112 emergency calls by

[15] In the beginning of the ethnographic fieldwork in 1996 I planned to collect and analyse different types of emergency calls including when callers request ambulance, fire and police assistance. Due to space limitations in the thesis I decided to only focus on medical emergency calls when callers request ambulance assistance.

asking “SOS 112 what has happened?” In 1996, emergency call-takers initiated 112 emergency calls by identifying the emergency organisation with “SOS Alarm” or “SOS”. When call-takers initiated the calls by only providing the organisational identification without asking what had occurred callers routinely requested ambulance assistance and/or described the problem in the second utterance of the calls followed by the call-taker often asking “What has happened?” in the third utterance of the call.

In 2013-2016, I have participated in a number of interviews, telephone conversations and e-mail communications with emergency control centre professionals in different emergency control centres in order to see if the materials I used for the dissertation and the conclusions I draw in the study are up to date. The responses from the emergency control centre personnel exhibit that they are up to date. I have also compared my data with audio recordings and transcripts of medical emergency calls from 2007-2016 that have been presented in Swedish media. This comparison has confirmed that I have up to date materials and conclusions in the dissertation.

Audio recording as data collection method

Conversation analysts use audio[16] and video[17] recordings of naturally occurring human social interaction as it ordinarily unfold in social settings. In order to record the details of action in medical emergency calls I decided that audio recordings would be the method that would be the most advantageous for the purpose of this dissertation. The emergency control centre routinely taped all incoming and outgoing telephone calls as a call evaluation resource when necessary. I argue that this latter fact made the emergency call-takers less focused on that they were being recorded.

I use audio recordings as a data collection method because of a number of reasons. Recordings of human social interaction can be replayed extensively and independently inspected by other researchers in empirical examinations (Sacks 1984a:26). Heritage (1984a:236ff) and Leppänen (1998a:52) have discussed the solidity of using recordings when analysing human social interaction. The risk of missing details, adding parts and idealizing one’s own significance, decrease when analysed fragments can be viewed repeatedly. The opportunity to discover new interactive patterns increases when the researcher can observe the same fragment recurrently. Data can be employed for other purposes than the investigation for which they were collected. Original data can be presented to readers of the final

[16] Atkinson and Heritage 1984; Drew and Heritage 1992.

[17] Goodwin, C. 1981; Heath 1986; Goodwin, M. 1990; Kendon 1990; Peräkylä 1995; Leppänen 1998a.

reports. In this thesis, I present analyses of the transcribed audio recorded medical emergency calls. The reader can subsequently inspect my analysis for a re-examination and use the transcriptions for comparative research (Health 1986; Goodwin, M. 1990:7). I transcribed every excerpt in the dissertation and I analysed the data by replaying and re-examining the tapes[18].

This thesis is mainly based on audio-recordings of medical emergency calls, observations and field notes. In 1996 and 2015, I also interviewed call-takers between emergency calls during fieldwork when I asked them to explain and give comments on ongoing events in the medical emergency calls and in the emergency control centre. The interviews are documented in my field notes. I have used the interview data to explain organisational practices in medical emergency call operations.

Limitations with the interview method have been expressed in conversation analytic research (Heritage 1984a:236ff). Mondera (2014) argues that interviews "offer post hoc reconstructions of and rationalizations for actions often in the form of narratives or as responses to questions within a constrained and limited interactional format". Leppänen (1998a:51-52) argues that "(i) Actors tend to forget most of what actually happened in situations when they tell researchers about them". (ii) "Actors tend to be selective when they tell what happened". (iii) "Actors tend to add things when they tell what happened in a situation". (iv) "Actors tend to idealize their own roles when they tell what happened" (Leppänen 1998:51-52). Leppänen (1988a:52) also states that he did not rely on observations because the "observer would not be able to remember very much of what happened and not be able to note enough details". Experimental methods are not used in CA research because "experiments create their own contexts" and "new contexts" (Ibid.). They also detach the studied persons from the natural environment in which the interactions would have occurred (Ibid.).

Atkinson (2015:96) argues that "we need to treat interviews as generating accounts and performances that have their own properties, and ought to be analysed in accordance with such characteristics. We therefore need to appreciate that interviews are occasions in which the enacted particular kinds of narratives, and in which 'informants' construct themselves and others as particular kinds of moral agents". Sanjek (2014:67-68) emphasises that interviews are problematic "Human beings are apt to reinterpret or reformulate the past to make it conform to their ongoing sense of the present" and still argues that interviews are crucial in ethnography. Blommart and Jie (2010:49) discuss how the interviewer is part of the interview in that "you also build, construct and make the interview into what it is" and this "impact is part of your 'data'". Even if CA has criticized and avoided the

[18] I own the data and these are the recordings I used in the analysis of this thesis. I did not make my own recordings of emergency calls. The tapes and transcriptions are stored in a locked cabinet.

interview method I see an analytic use of interviews especially giving access to the emergency call-takers' perspectives on medical emergency call management.

Ethical considerations

In this study, I have followed ethical principles discussed in past ethnographic, pre-hospital emergency care and social science research (Israel 2015; Atkinson 2015; Hammersley and Atkinson 2007; Gobo 2008; Schmidt et al. 2004). Medical emergency calls with patients and callers in complex and distressing events and at a time of heighted vulnerability for patients have resulted in that a number of ethical decisions have been made in the project[19]. In the pre-field work preparation (Blommaert and Jie 2010), I contacted a Swedish emergency control centre and introduced the study. Ethical approval was sought and granted by the emergency control centre that I co-listen to and make copies of all telephone calls and radio communications made to and from the centre. Permission to collect and use the audio recordings of the calls and radio communications for research purposes was given by the chief of operations in this emergency control centre. At the time of this data collection there was no other required ethical review.

I signed secrecy contracts with SOS Alarm agreeing to that no caller, patient or call-taker identifiable details were going to be revealed. Participation by the emergency call-takers in the study was voluntary and consent was given after both verbal and written information about the research project was provided. None of the call-takers in the emergency control centre opposed to the fieldwork and data collection. An ethical problem in this study is that patients and callers in the medical emergency calls were not informed that they were being researched. In order to have respect for and protect persons involved in this study and for them to remain anonymous I have changed names, places and other identifying features of call participants in the transcripts.

Transcription

The preparation of data for analysis contains detailed transcription in order to aid the analysis of medical emergency calls. The extracts used in the analysis of vocal conduct in medical emergency calls in this thesis were transcribed using Jefferson

[19] Dingwall (2008); Hammersley and Traianou (2012); Kalman and Lövgren 2012; Vetenskapsrådet http://codex.vr.se/

transcription conventions which is the standard transcription system in CA[20]. I first carried out a basic transcription when I listened to the calls in real time during the field study at the emergency control centre. I performed a more fine-grained level transcription of the call interaction after the fieldwork. The conversation analytic approach to transcription is "to get as much of the actual sound as possible into the transcripts, while still making them accessible to linguistically unsophisticated readers" (Sacks, Schegloff, and Jefferson 1974:734). Consequently, CA transcriptions are not grounded in The International Phonetic Alphabet (IPA) or other phonological transcription systems. This effort to make transcriptions accessible to wide-ranging readers has been evaluated by Couper-Kuhlen and Selting (1996:40). A number of symbol systems for transcribing human social interaction are utilised by sociologists and other researchers who examine naturally occurring interaction (Schiffrin 1994 discusses different types of transcription conventions). In the analysis of this dissertation, the recordings were used in combination with transcriptions of the recordings in orthographic form.

The transcript is constantly a selective account of human social interaction. Hutchby and Wooffitt (1998:88) argue that a high-quality CA transcript is devised to bring to light analytically significant characteristics of social interaction. Transcribing means an alteration of recorded talk-in-interaction to a written medium. This procedure changes sounds and images to pictures, letters, arrows and other graphic codes (Ochs 1979; Linell 1992). Linell (1992:2) asserts that transcription entails a standardisation to the written language.

Ochs (1979:43) views transcription as theory by arguing that all transcription conventions describe diverse features of conversations and are shaped for particular research problems of analyses (Ochs 1979:43-72). The transcriptive work is a selective practice reflecting the theoretical goals and definitions of the researcher (Ibid. 1979:44). Transcriptions are thus interpretive records, chosen and edited (Ochs 1979:44-45; Nettelbladt 1993:4; Linell 1992). Schieffelin (1990:32) claims that transcriptions reflect the special biases of the researcher. Every transcription is discerning what to transcribe in the data. Ten Have (2007) consequently advises the researcher to make her or his own transcriptions. Conversation analytic transcription conventions used in this study are presented in Table 1.

[20] Jefferson 2004; Sacks, Schegloff, and Jefferson 1974:731-733; Ochs, Schegloff and Thompson 1996:461-465; Atkinson and Heritage 1984; Hutchby and Wooffitt 1998:73–92; Drew and Heritage 2006a; Hepburn 2004; Leppänen 1998a and Lindström 1999a on guidelines for transcribing Swedish conversations.

Table 1
Conversation analytic transcription conventions

SYMBOL	*INDICATE*
	Temporal and sequential relationships, which concern how diverse fragments of talk are related in time
[	Separate left square brackets, one above the other on two successive lines with turns by different speakers, indicate a point of overlap onset, whether at the start of a turn or later.
]	Separate right square brackets, one above the other on two successive lines with turns by different speakers, indicate a point at which two overlapping utterances both end, where one ends while the other continues, or simultaneous moments in overlaps which continue.
=	Equals signs ordinarily come in pairs – one at the end of a line and another at the start of the next line or one shortly thereafter. They are used to indicate two things. If the two lines connected by equals signs are by the same speaker, then there was a single, continuous turn with no break or pause, which was broken up in order to accommodate the place of overlapping talk. If the lines connected by two equal signs are by different speakers, then the second follows the first with no discernible silence between them or was "latched" to it.
°Yes°	Talk appearing within degree signs is lower in volume relative to surrounding talk.
(0.5)	Numbers in parentheses indicate silence, approximately represented in tenths of a second; what is given here in the left margin indicates 5/10 seconds of silence. Silences may be marked either within an utterance or between utterances.
(.)	A dot in parentheses indicates a "micropause", hearable but not readily measurable, ordinarily less than 2/10 of a second.
Ja	Uppercase is usually used at the beginning of turns. When relevant for the analysis, uppercase may also be used to indicate the start of a new turn construction team within a turn.
	Aspects of speech delivery, including changes in pitch, tempo, loudness, degrees of emphasis, and voice quality
.	The punctuation marks are not used grammatically, but to indicate intonation. The period indicates a falling, or final, intonation contour, not necessarily the end of a sentence.
? ,	Similarly, a question mark indicates rising intonation, not necessarily a question, and a comma indicates "continuing" intonation, not necessarily a clause boundary.
¿	The inverted question mark indicates a rise stronger than a comma but weaker than a question mark.
::	Colons are used to indicate the prolongation or stretching of the sound just preceding them. The more colons, the longer the stretching. On the other hand, graphically stretching a word on the page by inserting blank spaces between letters does not necessarily indicate how it was pronounced; it is used to allow alignment with overlapping talk.
-	A hyphen after a word or part of a word indicates a cut-off or self-interruption.
<u>N</u>ej	Underlining is used to indicate some form of stress or emphasis, either by increased loudness or higher pitch. The more underlining, the greater the emphasis. Therefore, underlining sometimes is placed under the first letter or two of a word, rather than under the letters which are actually raised pitch or volume.
NEj	Especially loud talk may be indicated by upper case; again the louder, the more letters in upper case. And in extreme cases, upper case may be underlined.
> <	The combination of "more than" and "less than" symbols indicates that the talk < > between them is compressed or rushed. Used in the reverse order, they can indicate that a stretch of talk is markedly slow or drawn out. The "less than" symbol by itself indicates that the immediately subsequent talk is "jump-started", i.e. sounds like it starts with a rush.
Hh	Hearable aspiration (breathing) is shown where it occurs in the talk by the letter "h" -- the more h's, the more aspiration. The aspiration may represent breathing, laughter, etc. If it occurs inside the boundaries of a word, it may be enclosed in (hh) parentheses in order to set it apart from the sounds of the word. If the aspiration is an inhalation, it is shown with a dot before it (.hh).

~husband~	Wobbly voice[21]
	Metacommentary and uncertain hearings
((cough))	Double parentheses are used to mark transcriber's description of events, rather than representations of them. Therefore ((cough)), ((sirens)), ((telephone rings), ((footsteps)), ((whispered)), ((pause)) and the like.
(arm)	When all or part of an utterance is in parentheses, or the speaker identification is, this indicates uncertainty on the transcriber's part, but represents a likely possibility.
( )	Empty parentheses indicate that something is being said, but no hearing could be achieved. If the empty parenthesis is placed where speakers are identified, it indicates that no identification of the speaker could be achieved.
(du)/(nu)	In transcription fragments in papers, two parentheses may be printed, one above the other; these represent alternative hearings of the same strip of talk. On the computer, this format cannot be reproduced, and is replaced by putting the alternative hearings in parentheses, separated by a single slash.
→	Right-directed arrow pointing to the interactive phenomenon analysed.

The Swedish medical emergency calls in the data corpus were translated into English. In the transcriptions the first line provides the Swedish original. The second line in English makes available a word-by-word rendition of the Swedish original. The third line is a free translation that sounds idiomatic in English (Leppänen 1998a; Lindström 1999a; Hilmisdottir 2007).

Data analysis

In this dissertation, I perform an inductive, qualitative and data-driven data analysis to examine interactive patterns in medical emergency calls which I will present here. Conversation analysts select data using both large and varied collections of data to collect instances of the interactive phenomenon being studied and singular cases. Sacks (1995a) proposes that "we can come up with findings of considerable generality by looking at very singular, particular things. By asking what it takes for those things to have come off (298)". For more details about single case analysis of conversations see Schegloff (1987, 1993).

I performed the conversation analytic data analysis by repeated listening to and observing the medical emergency calls with the objective of identifying and collecting instances and collections of a phenomenon or a practice by describing and explaining recurring interactive practices of interaction between emergency call-takers and callers, call participant orientations, commonalities in contexts of use and deviant case analysis (Sacks 1984a; Sidnell and Stivers 2014:2; Jefferson 2004; Psathas and Anderson 1998). Deviant cases function as examples that "prove the rule" (Heritage and Stivers 2014:665). Reviewing the medical emergency calls in my data corpus, I selected and gave a detailed account of what was going on in

[21] http://homepages.lboro.ac.uk/~ssah2/transcription/transcription.htm

the calls. In analysing each of the interactive procedures individually, I observed general and specific functions. This data analysis of occurrences resulted in examining interactive practices in the calls, using terms from CA research and inventing new terms and re-conceptualisations of the varied procedures employed and oriented to by medical emergency call participants.

Schegloff (1993) argues that the main focus in studies of human social interaction is the demonstrable orientation of the participants in conversations toward the interactive phenomenon under investigation. Maynard (2014:19) states that "In the CA view, analysts need to discover participants' orientations rather than impose their own". Sidnell (2014:79-80) claims that interaction participants' orientations are demonstrated in their own talk and in the "next-turn proof procedure". Next-turn proof procedure means that we can see in the recipient's response how this person understood the prior turn. We can also use this foundation to our own analysis of what a participant meant to be doing by achieving that turn. Based on the analysis, the researchers formulate interactive phenomena to describe the occurrence of social practices.

A central conversation analytic notion in data analysis is "relevance". Schegloff (1992) proposes that this is a fundamental practical matter and the outcome is two problems which he describes as "relevance" and "procedural consequentiality". Relevance entails the problem of demonstrating from the details of human social interaction that analysts claim that the participants are oriented to (Schegloff 1992:110). Difficulties emerge because people can depict themselves and interactional parties in numerous ways (Sacks 1995). CA aims to exhibit that participants of social interaction are currently oriented to such descriptions. Procedural consequentiality is required in CA according to Schegloff (1992:111). Procedural consequentiality refers to that conversation analysts must be able to display how descriptions of persons and environments are "procedurally consequential" for human social interaction. The key issue here is to discover how actions accomplished in a setting such as an emergency control centre may have an outcome on the form, course, content, or interactive patterns of medical emergency calls.

Schegloff (1992) and Silverman (1998) have demonstrated that conversation analytic research questions are not decided beforehand but made visible in transcribing and analysing audio and video recordings of human social interaction. The centre of attention in CA studies are how people use talk in social interaction and the goals of the analyses are structural, i.e., "to describe the intertwined construction of practices, actions, activities, and the overall structure of interactions" (Sidnell and Stivers 2014:2). Particularly the focus is on the interactive practices or the mechanics of conversation referring to the procedures that manage the various organisational eventualities of social interaction (Schegloff 2007:xiii, xiv).

A theoretical assumption of CA is that human social interaction is sequentially organised[22]. The audio recordings of the medical emergency calls were thus analysed by using sequential analysis to understand call participants' social actions by reference to their immediate local interactive context and the overall structural organisation of the call. Schegloff (1984) argues that the positioning of an utterance in human social interaction is important to the comprehension of its significance and to the analysis of its meaning as an action. The focus of the sequential analysis is to identify sequential patterns and sequential variations in the collections and single cases by asking the main question in sequential analysis why that now? (Schegloff and Sacks 1973:299). In answering this question, I described what each action in medical emergency calls did in relation to previous action(s), and what it projects about the next action(s)[23]. In identifying and describing how emergency call-takers and callers achieve interactive practices in medical emergency calls, I analysed contents, positions, formats of actions and responses to actions.

The ethnographic fieldwork and ethnographic methods

Up to this point in the thesis the emphasis has been on conversation analytic theory, data and methods. I will now describe the ethnographic fieldwork in the emergency control centre and the ethnographic methods I have used in this study. The purpose of my ethnographic fieldwork in the emergency control centre was to co-listen to emergency calls, observe, take observational field notes, interview call-takers, understand and explain social interaction in medical emergency calls that call-takers and callers participate in, and relate this interaction to diverse facets of the ethnographic micro- and macro contexts belonging to the examined calls[24]. Ethnographic fieldwork refers to a research process where the researcher is

[22] Sequentiality refers to the connection of an utterance to another utterance in social interaction (Hilmisdottir 2007:61). An example of a sequential connection when one action follows the next action is a question followed by an answer.[22] A sequence of interaction is defined as a "course of action implemented through talk" (Schegloff 2007). Sequence makes sure that every utterance has its own position that it occupies within the social interaction. Interactive practices in conversations are accomplished and oriented to by participants through sequence organisation.

[23] Schegloff (1996:172).

[24] Blommaert and Jie (2010:17-18) define micro-contexts as "the contexts that define the situation" and macro-contexts as the "social, cultural, historical, political, institutional contexts". In this thesis ethnographic contexts refer to the decision support system, routines, checklists and priorities of the emergency control centre and its personnel, call-takers' knowledge about varying acute medical conditions, injuries, medications and local geography, work distribution between call-takers and dispatchers, legal responsibilities of professionals and organisations involved in emergency response operations and other aspects of medical emergency call operations.

physically present and close to the research object in the natural "field" environment as opposed to laboratory science doing experiments in laboratory settings (Sanjek 1990; Sluka and Robben 2010:4). In the field the researcher directly observes, takes field notes and participates in the everyday routines and habits of the persons and the institution being investigated.

Observing call-takers and co-listening to medical emergency calls

Ethnographic fieldwork methodology encompasses two research strategies: participant observation and non-participant observation. Gobo (2008a:5) characterises participant observation as: '(1) the researcher establishes a direct relationship with the social actors; (2) staying in their natural environment; (3) with the purpose of observing and describing their behaviour; (4) by interacting with them and participating in the everyday ceremonials and rituals; and (5) learning their code (or at least part of it) in order to understand the meaning of their actions.' Gobo (2008a:5) defines non-participant observation as "a strategy where the researcher observes the subjects 'from a distance' without interacting with them".

Mapping the organisational environment of the emergency control centre, I was combining two research strategies during the fieldwork. Through non-participant observation I was observing call-takers and dispatchers "from a distance" without interrupting. I also established direct contacts with call-takers and dispatchers by sitting next to them mainly observing, listening in to calls and taking observational field notes and at the same time asking questions and staying in their natural work environment during both day and night shifts. The aim was to observe and describe interaction between emergency control centre professionals, and between call-takers and callers. I was interacting with call-takers and dispatchers in their everyday routines and aimed to learn their work cultural codes and expectations of each other's conduct (Gobo 2008a:13). In conjunction with the observations, I collected details about the tools and documents call-takers and dispatchers used while working such as the medical index which will be discussed in chapter 4.

My role as an observer was that of an onlooker observer of the people in the emergency control centre setting. The focus of the observations was both a narrow focus on single events and a broader focus on an overall view of what was going on in the centre. For the thesis the emergency control centre personnel made copies of the audio recorded telephone calls that I co-listened to when I was present in the emergency control centre control room as an observer. During fieldwork I observed ongoing activities in the emergency control centre five or six days per week. Every co-listening and observation session lasted for eight hours. The audio recordings

discussed earlier in this chapter and the observations were made during both day and night shifts.

Observational field notes

Ethnographers formulate field notes through participant observation. Hammersley and Atkinson (2007:141-142) introduce observational field notes as "the traditional means in ethnography for recording observational and interview data" stressing that "what is recorded will depend on one's general send of what is relevant" to the research problems. Wolfinger (2002) discusses field notes with a focus on the relevance of background expectations. Emerson et al. (1995) describe ethnographic field notes as accounts of the researcher depicting observations and experiences when taking part in ongoing activities in an engaged way. Blommaert and Jie (2010:37) argue that field notes "tell us a story about an epistemic process: the way in which we tried to make new information understandable for ourselves, using our interpretive frames, concepts and categories, and gradually shifting into new frames, making connections between earlier and current events, finding our way in the local order of things". Blommaert and Jie claim that field notes are important parts of the archives of research, the "material memory of field-work, of the things you learned and how you learned them" (Ibid. 38). Murchinson (2010:72) emphasises that field notes should include "as much of the sensory experience of participant-observation as possible" and that the researcher cannot record every feature of the object studied but "should focus on those details that seem most relevant to your research focus".

A critique of using observational field notes is provided by Mondera (2014:33) arguing that "field notes document the unique labile experience and post hoc recollection of the observer – and are subject to memory limitations, situated selectivity and locally occasioned interpretation and intuition". Comparing field notes and audio recordings (and transcriptions) Silverman (2001:13) contends that "compared to field notes of observational data, recordings and transcripts can offer a highly reliable record to which researchers can return as they develop new hypotheses". The audiotapes of the naturally occurring medical emergency calls to the emergency control centre allowed me to review and re-listen to the calls over and over again. The problem with observational field notes as Silverman (2001:126) states is that the researcher is stuck with the form in which the researcher has made them at the time of the observation and that the readers will only have access to how the researcher recorded events.

During the ethnographic fieldwork I collected first-hand particularities about the physical setting and the "naturally occurring" interactive practices in the emergency control centre and took three types of field notes. First, I carefully described what I saw and heard in the emergency control centre in order to get an overall picture of what was going on and gradually looked at "specific targets" in

the interaction and the setting (Blommaert and Jie 2010:29). Second, in between calls I asked call-takers to clarify aspects of their work procedures. As a present observer I was able to co-listen to incoming emergency calls as they occurred using a co-listening device sitting next to call-takers during the fieldwork. I used a fieldwork journal to record problems and ideas that arise during the fieldwork and kept a running record of analysis and interpretation (discussed by Kirk and Miller 1986:53). Third, after each co-listening and observation day, I typed the hand-written notes on the computer. While typing the field notes I reflected on what I had heard and observed asking questions such as "How and why did these actions and interactional practices occur?" "How may they be interpreted and explained within the larger operation of the emergency control centre?"

Combining ethnographic and conversation analytic methods

I will now discuss how I combined ethnographic and conversation analytic methods in this study. Hammersley and Atkinson (2007:230) demonstrate that ethnography is not just a set of methods but rather a particular mode of looking, listening, and thinking about social phenomena demonstrating a unique analytic mentality orientation. This ethnographic orientation involves investigating circumstances in which people act and understanding the perspectives of the people being studied to explain and describe what people say about their world and what they do in activities. Ethnographic research methods include ethnographic fieldwork, participant observation, non-participant observation, observational field notes, tape recordings, open-ended interviews, documentary sources and material artefacts (Maynard 2006:61; Gobo 2008; Sanjek 2014:59). These ethnographic methods can be used for a multitude of ethnographic purposes. Comparison and contextualisation are key methods in ethnographic analysis (Sanjek 2014:59).

Moerman (1988) combines CA with ethnographic methods in a study of Thai conversation. He argues that, "Sequential analysis delineates the structure of social interaction and thus provides the loci of actions. Ethnography can provide the meanings and material conditions of the scenes in which the actions occur" (1988:57). Moerman defines ethnography as directed toward comprehending and explicating how people understand their lives. In his view, CA contributes with the precise analysis of recurrent sequential patterns of conversations between people. Ethnography on the other hand, observes, interviews and reflects further about what a person say or do to another or to the ethnographer in social interaction by making the text culturally contexted by commenting upon and translating the local cultures of people and including historic accounts in the analysis making it a reflection tool in ethnographic fieldwork used in combination with CA.

As Maynard (2006) has discussed the combined use of CA and ethnography implicates theoretical and methodological issues and these matters are vital to reflect upon when using the two methodologies together. As I demonstrate in the empirical chapters, CA allows me to do a detailed utterance-by-utterance analysis of medical emergency calls. The main strength of doing ethnographic fieldwork when collecting data for this dissertation is in my opinion the opportunity to capture ethnographic contexts that are significant in the pre-hospital emergency care operations of the emergency control centre which may be observed in and outside medical emergency calls.

I explore medical emergency calls in the ethnographic context when interpreting the calls. I have thus supplemented the conversation analytic perspective with ethnographic data to describe the emergency control centre setting and professional identities, and explain courses of action and basic organisational contexts of the emergency response organisation. In the ethnographic analysis, I seek to locate and interpret the ethnographically local meanings, functions, and implications of human actions and organisational practices, and contextualise modes of organisation and organising principles of the culturally defined setting of the emergency control centre within a broader societal framework (cf. Atkinson 2015). I can further explain principles, practices, work tasks, professional knowledge, goal orientations and shared meanings of emergency call-takers when talking to callers in medical emergency call activities that sequential analysis of medical emergency calls describe.

Ethnography has objected to CA for its supposed over-formalistic "systems engineering" perspective (Goffman 1981) viewing "social context" only as locally accomplished and oriented to by people when conversing. In return, CA argues that such contexts can only be set up, displayed and recognised through particular modifications in the sequential organisation of human social interaction. In the final analysis, it is the people talking together who use the social practices that create the interactional context (Heritage 1984a:280-290; Schegloff 1992).

Silverman (1994) and Silverman and Gubrium (1994) discuss the relationship between "how" and "why" questions of social order in sociological analysis of the conversation analytic "how" perspective focusing on the details of interaction and the ethnographic "why" approach recognising the structurally broader or the subjectively meaningful contexts within which the details occur. CA may be used to answer "how" questions in identifying contexts in observable features of the participants' activities. This is a way to avoid clarification of purely stipulated events. After performing a detailed sequential analysis of the interaction the ethnographic "why" questions may be used to reflect about explanatory issues. The authors argue that only after the demonstration of the "how" aspects of institutional interaction are we able to concentrate on the "why" questions in ethnographic approaches. Examples of "why" questions are the practical import of the research, the restrictions of the social and organisational contexts in which observed

interaction patterns operate and the connections between interaction and ethnographic contexts. CA and ethnography thus share the focus on recording details but use different methods and ask divergent research questions when collecting, describing and analysing data.

Examples of CA-informed ethnographies are Sidnell (2005) and Clemente (2005, 2007). Sidnell (2005) examines male peer interactions in an Indo-Guyanese community using macro ethnographic data, micro-situated ethnographic data limited to particular sequences of talk in a single CA-informed investigation, CA analyses of transcribed data and non-CA concepts. Clemente (2005) investigates communication and culture in the management of pediatric cancer treatment in Catalonia, Spain. Clemente (2007) analyses information withholding in a paediatric cancer team in Catalonia juxtaposing but not combining CA and ethnographic datasets and analyses.

In the first part of this chapter, I have introduced the data, research ethics and conversation analytic methods. The qualitative research design of this thesis includes audio recordings of authentic human social interaction, detailed transcriptions of tape recordings, squential analysis of specific interactive phenomena and presentations of the research. Conversation analysts routinely work with audio and video recordings of naturally occurring (i.e. non-experimental) interaction between people in order to enhance the reliability and validity of the discoveries of the overall structures and the fine details of actions in interaction. The audio and video recordings enable the analyst to play and replay conversations. This latter practice is relevant both for the transcription process and for the analysis of the interactive phenomena being studied. Another benefit of using tape recordings is that they permit the opportunity to study conversations with other analytic concerns.

The conversation analytic transcription method aims to write down as many facets of the social interaction as possible and at the same time present this transcription to the reader in an accessible way. The data in CA are the actual recordings and the transcription functions to demonstrate the interactive phenomenon in written form. The transcriptions are selective and interpreted mirroring the theoretical goals and definitions of the researcher. I discussed the principles of sequential analysis viewing talk as action. Sequential analysis means to find social patterns in the data and formulate a data-based reasoning of what the researcher notices about an interactive phenomenon. The focus is on the various social actions that are being achieved in the interaction by grounding the analysis in the orientations of the participants to the actions and the interactional environment.

In the second part of this chapter, I introduced ethnographic methods I use in the dissertation and also compared these to conversation analytic methods. I do not claim that this thesis is an ethnography of medical emergency calls and the emergency control centre. I use ethnographic data as a background to the conversation analysis of medical emergency calls. My ethnographic fieldwork was

aimed at co-listening and audio recording medical emergency calls and finding out overall contextual aspects of medical emergency call management from the perspectives of emergency call-takers and emergency control centre policy. I have performed a multi-modal ethnographic fieldwork, including repeated listening to medical emergency calls, observing interaction in the emergency control centre, taking observational field notes, transcribing and analysing calls and interviewing call-takers about the management of medical emergency call operations. In the ethnographic analysis I seek to locate and interpret the ethnographically local meanings, functions, and implications of human actions and organisational practices and contextualise modes of organisation and organising principles of the culturally defined setting of the emergency control centre within a broader societal framework.

4 Medical emergency calls in context

Medical emergency calls in practice

Chapter 4 explores medical emergency calls in context. It covers activities in the medical emergency call practice. The chapter addresses the multitude of listeners to and systematic surveillance of participants in medical emergency call operations. It also presents the decision support system, tools and communication systems of the emergency control centre, organisational structures of the Swedish emergency response organisation SOS Alarm, the collaborative professional practice of the emergency control centre and ambulance services.

The medical emergency call process I will introduce in this chapter is elaborated from my observational field notes and decision making system of the emergency control centre called *The Swedish Index for Emergency Medical Alarm Reception* (2001) visible on the computers of emergency call-takers. I view the pre-hospital emergency care practice as an interactive project with a beginning in the medical emergency call and end point when the emergency medical dispatcher evaluates issues of the emergency event with the ambulance team. Pre-hospital emergency care also includes event operations in medical emergency calls, dispatching ambulance teams, how ambulance services arrive to critically ill and injured patients and care for them at emergency sites and in ambulances on the way to hospital emergency departments.

Nationally, SOS Alarm receives approximately 3.5 million calls per year to the emergency number 112 when callers request fire, medical emergency and police assistance. In 2013, SOS Alarm managed approximately one million ambulance transport emergencies. The number of care related calls are larger than that. In 2014, 43% of the incoming 112 calls were care related[25]. Emergency call-takers handle many of the care related calls with advice-giving and other types of transport.

Participants collaboratively achieve pre-hospital emergency care practices by using standardised procedures and resources including a contingency openness to

[25] Interviews with call-takers and emergency organisation professionals 1995-2016. https://www.sosalarm.se/Global/Pressrum/Trendrapport%20112%20mars-maj%202015.pdfhttps://www.sosalarm.se/Vara-tjanster/Vard/Utalarmering-av-ambulans/ 15th April 2016.

vague, unforeseen, acute and incident-specific events to save lives and prevent injuries. The collaboration objective for the participants is to work together to solve problems involved in medical emergencies. The medical emergency call process includes seven key practices which are accomplished separate or parallel to other practices and is presented in Figure 2:

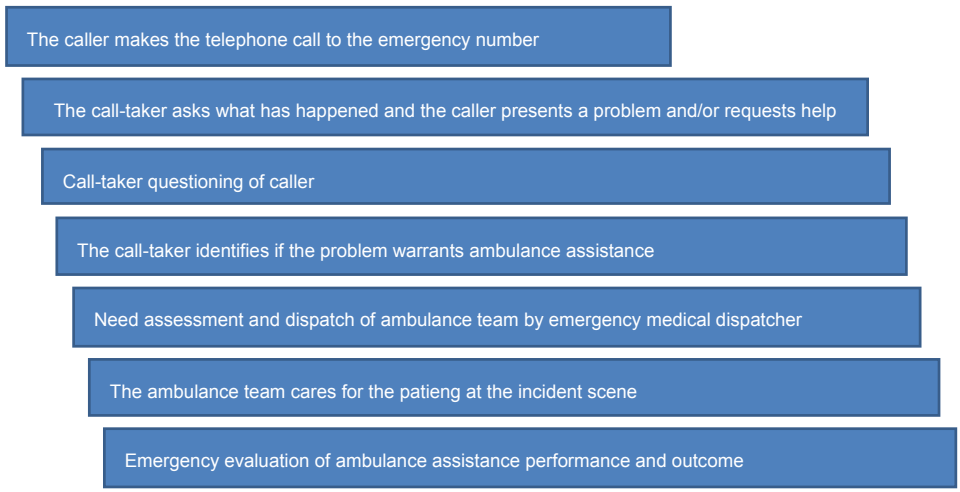

Figure 2
The medical emergency call process

I will now describe this medical emergency call process and its practices more in detail.

(1) *The caller makes the telephone call to the emergency number 112* which initiates the medical emergency call process[26]. The call is connected to the geographically closest emergency control centre. The address of the caller is collected from the telephone index and positioned on a digital map. When the caller dials from a mobile phone the call-taker is not able to get an exact location.

(2) *The emergency call-taker asks "SOS 112 what has happened?" and the caller provides a problem presentation and/or requests help* usually through an ambulance request. Call-takers switch from casual conversations with colleagues to emergency modes when answering emergency calls. They sit before computer screens interpreting and acting upon the collected data.

[26] According to SOS Alarm policy call-takers should answer an emergency call within eight seconds. In case call-takers have not answered after 30 seconds the caller receives a message saying: "You have called the emergency number 112, we experience a high work load at the moment but will reply very soon'. This message is repeated in English http://www.dn.se/nyheter/sverige/sos-alarm-nedringda/ 28th July 2014.

(3) *Call-taker questioning of the caller* is a central interactive practice in medical emergency calls. After the initial standard question of what has happened the call-taker takes essential details about the patient's conditions and the exact location and logging them onto a computer system speed-typing each detail on to the screen[27]. Details include the nature of the problem and whether the casualty is conscious and breathing normally. The call-taker talks the caller through emergency events. When carrying out the questioning practice the call-taker often gives concrete first aid and emergency response instructions to the caller.

Stålhandske (2009:84) makes a distinction between symptom based and event steered medical emergency calls. In a symptom based medical emergency call symptom details emerge from patients or callers that can be used by call-takers when assessing the prioritisation of the emergency. In an event steered medical emergency call a caller describes an event about, for instance, injured persons in a road traffic accident.

(4) *The call-taker identifies if the problem presentation warrants ambulance assistance*. The call-taker decides which of several described symptoms is the most critical and prioritises the case into one of four levels of urgency (which will be described later in this chapter). In the event less acute level of care is appropriate, the call-taker suggests other options to the caller such as taking a taxi or that the person goes on her or his own to a healthcare facility. Already at this point the call-taker may connect the emergency medical dispatcher for co-listening of the call so that the dispatcher can send an ambulance team to the patient during the call.

(5) *Emergency need assessment and dispatch of ambulance team by emergency medical dispatcher*. The dispatcher listens in to calls, assesses the emergency details that call-takers have collected, prioritises needs of patients and make rapid decisions about which ambulance teams to send to patients at emergency sites. The dispatcher looks at a map on the computer showing ambulances en route to see what ambulance teams are available nearby the emergency site. The emergency medical dispatcher has to make the best possible of resources, meet standards for response times and give clear and concise information to ambulance teams. Ambulance teams confirm to the dispatcher that they are going to specific emergencies.

(6) *Ambulance team cares for the patient at the incident scene* and transports the patient to the hospital emergency department. When the ambulance team consisting of an ambulance nurse and ambulance technician goes to the patient at the incident scene they use the information collected by the call-taker to locate patients. Details about emergencies arrive to ambulance services through a voice or text message to a pager. In this message emergency medical dispatchers inform about the character, priority level and address of the emergency. When the ambulance team arrives with the patient at a hospital emergency department they

[27] See Lundberg (2007:22) for a discussion on the parallel activities of the emergency call operator and the emergency medical dispatcher in Swedish emergency calls.

verbally report about conditions of patients and circumstances of emergency events to hospital emergency department personnel.

In collaboration-based emergency management, for instance, road traffic accidents with injured people, the ambulance service, the police and the fire services, go out to emergency sites. Each emergency assistance team responds and takes care of varying aspects of the emergency event. The ambulance team cares for the victims. Police officers take command of traffic flow, route lines of vehicles past the accident scene, and make the accident site safe. Firefighters extinguish fires and extract people from vehicles.

(7) *Emergency evaluation of ambulance assistance performance and outcome*. The emergency medical dispatcher positions and monitors ambulance teams and participate via radio communication in status and follow-up reports with ambulance teams and emergency control centre colleagues. After emergency events ambulance teams report to the dispatcher to evaluate the ambulance assistance performance and outcome of each emergency.

Professionals and functions involved in medical emergency operations are introduced in the Swedish Index for Emergency Medical Alarm Reception (2001:35): (1) *On-call physicians*. When call-takers receive calls in which callers request an on-call physician or the healthcare advice service and there is no need for an ambulance call-takers connect the calls to these two types of services. (2) *Ambulance services* are used when patients are in need of a stretcher transport and when medical conditions of patients require medical attention, monitoring or medical equipment and/or care during transports to hospital emergency departments. (3) *Rapid response car* (in Swedish "akutbil"). The rapid response car is dispatched at the same time as the ambulance in medical emergencies and is routinely staffed with a specialised nurse (e.g., anaesthetic nurse) or a physician and an ambulance technician. The rapid response car has advanced medical equipment and communication systems, and does not transport patients. The nurse or the physician contributes with advanced medical know-how to the ambulance team that may be in need of this expertise. (4) *Air ambulance helicopter* is dispatched according to local emergency rescue policies, priorities and routines. (5) *Fire services* are dispatched in case of a fire, gas accident, danger of an explosion, traffic accident, disaster, etc. In most Swedish municipalities fire service personnel have some healthcare education such as competence in using defibrillators to assist in priority 1 emergencies while waiting for ambulance teams. Defibrillation is a treatment form for life-threatening heart conditions[28]. (6) *Police* are always dispatched in road traffic accidents and other accidents. (7) *Ambulance planes* are dispatched according to local emergency rescue policies, priorities and routines. For a discussion of the emergency chain see Engerström, Castrén and Nilsson (2009).

[28] Personal communication with an ambulance nurse on 21st December, 2010.

Multitude of listeners and systematic surveillance of participants in medical emergency call management

Emergency call-takers and emergency medical dispatchers are placed in a windowless control room in the emergency control centre, which seals them off from the outside world they are urgently assisting. Systematic surveillance is a key dimension of the emergency control centre and the medical emergency call interaction between emergency call-takers and callers. Call-takers identify themselves when entering the emergency control centre and are from that point on a moment-by-moment basis monitored, controlled by and encouraged to conform to the control architecture of the emergency control centre until they leave the work setting. The emergency control room reflects an emergency response operation of social control, security and monitoring.

The emergency control centre audio-records all incoming and outgoing calls. This is a natural part of work for emergency call-takers. During and in between medical emergency calls call-takers systematically monitor ongoing emergencies, communicate information to each other and coordinate a disparate collection of tasks and activities. The electronically mediated anonymous contacts between call-takers and callers are being surveyed by a multitude of listeners including emergency medical dispatchers, emergency call operators, nurses, physicians and managers of the emergency control centre who can listen in to ongoing calls. Details of the calls are systematically tracked and traced closely by the emergency control centre. Using technology as an instrument of social control makes it possible for emergency control centre managers to control call-takers in their operations, protect the organisation legally and evaluate and improve emergency control centre procedures by listening to ongoing and audio-taped calls. Work circumstances of medical emergency calls thus create a specific control and surveillance work situation compared to other types of professional telephone services with less security and surveillance requirements.

The decision support system

SOS Alarm uses the decision support system The Swedish Index for Emergency Medical Alarm Reception (2001) which steers the emergency call-taker questioning in medical emergency calls. The medical index is a structured questionnaire designed to assist call-takers to prioritise emergencies according to a standardised measure plan and to direct healthcare resources in medical emergencies. This index

is an integrated part of the the emergency response system that the call-takers can see on their computers. Even if the organisation directs medical emergency calls with the medical index boxes on the computer is it the individual call-takers and callers that accomplish the calls together. Call-takers and callers have a range of opportunities to act in individual ways and have options among alternative courses of action.

Decisions in and after medical emergency calls and the dispatch of ambulances builds on clinical signs, symptoms or events that the caller presents or the call-taker elicits in the medical emergency call interview (Wahlberg 2007:24; Källberg 2001). The medical index is organised into medical condition categories, for instance, breathing difficulties, diabetes or abuse. Under each disease heading, for example, allergic reaction, symptoms related to the different priority levels are listed on the left page. On the right page of the index advice for this specific topic is presented together with additional questions. The English translation of the medical index is a complement to the second edition of The Swedish Index for Emergency Medical Alarm Reception. The purpose of the translation is to be used during when call-takers question and give instructions to callers in English.

Emergency call-takers use the index in medical emergencies by deciding the relevant criteria from the information given by the caller. Call-takers are thus given support about what priority should be selected and may also read what types of advice that may be given to callers while waiting for ambulance teams. In this way call-takers can conceptualise medical emergencies. The emergency control centre uses a prioritisation list in The Swedish medical index with four criteria for emergency management.

In Table 2, I have provided the prioritisation levels in English as they are not available in the English version of the Swedish medical index.

Table 2
Prioritisation levels of Swedish medical emergency calls

PRIORITISATION LEVEL	*PRACTICE*
Priority 1, Code Red	Acute life-threatening symptoms or accident In the event of a medical emergency it is important that the emergency response resources are mobilised quickly. The nearest available ambulance is dispatched. Priority 1 should be seen as urgent cases according to the judgment of the emergency call operator. The ambulance service drives to the scene of the incident with a call for a free roadway by using blue lights and siren.
Priority 2, Code Yellow	Criteria in group priority 2 include those clinical conditions and circumstances that without delay should be examined by a physician. The closest possible ambulance should be dispatched. Priority 2 should normally not be viewed as urgent cases.
Priority 3, Code Green	Other Emergency Missions Other emergency missions where a reasonable waiting time is not judged to affect the condition of the patient. The transport is not viewed as an urgent case and the ambulance is distributed by taking into account the preparedness for transports with higher priority.
Priority 4, Code Green	Other Forms of Transport or Referral The transport is not an ambulance and the patient is not judged to have the need of care or monitoring by medically educated staff during the transport. A transport according to priority 4 can, for instance, mean a special stretcher transport vehicle or taxi. Priority 4 does not have to mean a form of transport but can even mean contact with Higher Medical Competence through the instrumentality of the emergency control centre and/or a reference to a suitable form of care.

Organisational structures of the Swedish emergency response organisation SOS Alarm

Sweden has an emergency response system with pre-hospital emergency care resources to help people and create safety in society. SOS Alarm is the Swedish emergency response organisation and caregiver that is responsible for managing telephone calls made to the emergency telephone number 112. SOS Alarm operates 15 emergency control centres. People can use a landline or mobile phone from anywhere in Sweden to reach the emergency number 112. SOS Alarm is medically responsible for medical emergency call operations as a formal caregiver (SFS 1982:763), and commissioned by the Swedish healthcare system to prioritise emergency events and give instructions to callers when waiting for ambulance teams. Pre-hospital emergency care resources are limited, and emergency call-takers and emergency medical dispatchers must therefore make acute medical care and socioeconomic decisions about how to use these resources.

SOS Alarm is a holding company owned by the Swedish Government (50%) and The Swedish Association of Local Authorities and Regions (SALAR)[29] (50%). SOS Alarm receives medical emergency calls and dispatches ambulances on assignment by the county councils and regions of Sweden. The emergency control centres also respond to, manage and connect calls from the public to other emergency response organisations. According to the emergency management contract with the county councils and regions of Sweden SOS Alarm is specifically responsible for receiving ambulance assistance requests, dispatching ambulance resources (ambulances, emergency vehicles, air ambulance helicopters), and coordination of transports outside the home county.

Emergency control centres have constant access to nurse competence. In two of the emergency control centres in Sweden nurses are employed by SOS Alarm and work in the emergency control centres (including the emergency control centre where I conducted fieldwork for this thesis). In other parts of Sweden the medical care hotline is co-located with or in close connection to the emergency control centre while other emergency control centres are able to contact nurses in hospital emergency departments for support and advice-giving. Emergency control centres are also able to contact physicians for advice-giving. If time permits, SOS Alarm engages interpreters for call-takers and callers in order to facilitate understanding between call participants. Emergency call-takers and emergency medical dispatchers have expectations from The National Board of Health and Welfare and The Health and Medical Service Act and must observe and keep up to date with laws and codes of conduct in the everyday emergency control centre practice. The national mission of SOS Alarm is controlled in an emergency management contract between the Swedish State and SOS Alarm. Care cases are regulated in contracts with each county council of Sweden. The contracts include, for instance, how and by who a prioritisation of a care case should be handled and what professional competences an emergency control centre should possess.

A historical review shows that the origin of this particular telephone system goes back to the 1950s when Sweden started to use the same emergency number all over the country. The organisational history exhibits that the emergency medical dispatch organisation was created in the 1970s with emergency control centres which are placed in every county and are synchronised with the emergency services (Swedish National Board of Health and Welfare 1997). The emergency commission of SOS Alarm comprises the dispatch service, prioritisation of access to nurse and physician competence, advice-giving when waiting for ambulance services and a constant overview of where ambulance units are located.

[29] Swedish Association of Local Authorities and Regions http://skl.se/tjanster/englishpages.411.html

The emergency control centre

The emergency control centre investigated in this study is situated in a metropolitan Swedish city. The centre is classified as a high security building equipped with a reserve generator and an attack alarm. The emergency control centre serves the county council and 26 municipalities, and co-operates with 12 fire stations and 30 ambulance stations. The control room of the emergency control centre is staffed around-the-clock by approximately 20 emergency call-takers. They are working with head sets at their emergency response desks. The control room (600 m2) of the emergency control centre (3500 m2) is located in the centre of the city 30 metres underground. Emergency call-takers answer medical emergency calls. Medical care assessments for a decision on ambulance or patient transport where the patient is lying down are made by a nurse or a physician. A physician occupies the emergency control centre the greater part of the day. Other times a physician is available on the phone. The emergency control centre is staffed according to workload. This means that the day shift normally has double the amount of emergency call-takers working compared to the night shifts. In order to work in the emergency control centre the personnel must pass regular tests and be certified on a yearly basis.

Tools and communication systems

Since 2008 emergency call-takers use the digital emergency management system Zenit when answering incoming calls to the Swedish emergency number 112. This telecommunication switchboard supports computer- and radio-based communication. Digital maps and decision support technologies are available on the Zenit platform. The decision support technology is based in the Swedish medical index of the emergency organisation. The Swedish emergency control centres are connected in this shared technology platform making it possible for emergency control centres to support each other in crisis situations including management of larger accidents or disasters that require many resources. Zenit is also connected to the Rakel system which is a digital communication system for emergency and ambulance services, police, rescue services, the Coast Guard, Defence and Customs (see Engerström, Castrén and Nilsson 2009).

Ambulance teams receive the dispatch order immediately via a route computer in the vehicle. Emergency call-takers use the technique GPS (Global Position System) that ambulances are equipped with. Emergency call dispatchers can follow ambulances on their computers. It is also common that private citizen callers have GPS on their mobile phones. When call-takers receive emergency calls they can directly see where the caller is situated. Phones that do not have SIM (Subscriber

Identity Module) cards or phones that use IP (Internet Protocol) telephony, for instance Skype, are not possible to position.

The crisis preparedness functions of SOS Alarm operate nationally. The most important are to administer contacts between central government offices and deliver event details to these authorities. Workplace studies[30] by Artman (1999); Normark (2002a-b); Pettersson (2004); Pettersson et al. (2004); (2003) and Whalen and Zimmerman (2005) have focused on work, interaction and technology and the co-operation between emergency personnel. This research has increased the knowledge about how the personnel coordinate information and make joint decisions in order to control emergency events.

The collaborative practice of emergency control centre professionals

Medical emergency call management is a field of pre-hospital emergency care in which interprofessional teamwork is crucial. The collaborative professional practice of the emergency control centre professionals displays shared contacts and communication between colleagues with specific functions which are necessary for emergency response management of urgent and complex patient needs. The functions include the emergency control centre director, the chief of operations, the group head, emergency call operators, nurses, physicians, emergency medical dispatchers, fire operators, fire dispatchers and private safety alarm operators (Petersson 2011). In this workforce, distinctions are made up of educations with licensure, roles, standards and ethical foundations.

Emergency call-takers and computers with the medical index, maps and other technological resources are connected and can therefore respond collectively to ongoing incidents. In medical emergency calls specialised divisions of labour and professional interdependencies are visible. The requests for ambulance assistance are taken by emergency call operators or nurses who type in emergency details received from callers on computer terminals and initiate the immediate questioning, assessments, reassurances and on-telephone instruction giving. Physicians in the emergency control centre provide diagnostic and treatment support and make decisions in communication with emergency call operators, nurses and callers. Emergency details are shared with emergency medical dispatchers.

[30] See Luff et al. 2013.

Emergency control centre manager

The emergency control centre director manages the day-to-day work in the centre and assesses the ability of the organisation to respond to emergencies. The director makes organisational decisions based on information from the chief of operations and the group head.

Chief of operations

The chief of operations and the group head lead the professionals in the emergency management activities in the control room of the emergency control centre, and is responsible for the planning of emergency control centre operations and personnel. The planning consists of setting the schedules for the personnel and motivating the staff in competence development and salary negotiations.

Group head

The group head talks to the emergency control centre personnel about what is going on and is updated on what has happened during the previous work shift with the goal orientation of having an overall view of the status of events and personnel at the emergency control centre and reviews incident developments on an ongoing basis.

Emergency call operators

Emergency call operators receive, coordinate and transfer emergency calls in which callers request ambulance, fire and police assistance. Many emergency call operators are assistant nurses. Working quickly and calmly, the emergency call operators collect emergency details. The main work tasks of the emergency call operators are to answer emergency calls, position incidents, verify phone numbers and addresses, explore emergency needs, assist callers, interview callers and co-operate with other emergency organisations including ambulance services, fire services and the police (Petersson 2011).

Emergency call operators use emergency management experience and the decision making support system of the medical index to avoid overlooking any significant issues. Emergency call operators may use the co-listening function which means that other emergency response professionals may listen in to the emergency call in progress. Co-listening parties include emergency medical dispatchers, nurses,

physicians and representatives of other organisations, for instance, fire services and the police depending on the character of the emergency.

Nurses

Nurses and physicians have certified expertise in contrast to emergency call operators. A precondition to work as registered nurses in Sweden is that they have graduated from a three-year undergraduate programme resulting in a Bachelor's degree in nursing science and possess a registered nurse license. The license can be withdrawn in case the nurse is sentenced for malpractice caused by not following professional regulations for nurses. Nurses follow nursing standards defining the correct competence and professional roles for nurses[31].

The main tasks for nurses are to question callers and make individually designed medical assessments of symptoms and conditions of patients. They assess ambulance needs and the priority of the ambulance and give emergency care instructions. In the case an ambulance is not available, the nurse acts as an intermediary to connect the caller to another healthcare supplier, for instance, a primary health-care centre, district nurse, home-help service or social services.

Physicians

A physician works in the control room of the emergency control centre during the day shift. In evenings and nights a physician is available via telephone. The physician participates in the medical decision process, supports pre-hospital emergency care teams, makes medical decisions in particular patient cases and participate in re-prioritisation work at high call load. The physician monitors medical conditions of patients and is responsible for the emergency care given in the medical emergency calls to the emergency control centre[32]. In some medical emergency calls in my data the physician questions callers and patients, assesses patients and prioritises emergencies, and gives instructions about on-telephone measures such as cardiopulmonary resuscitation.

[31] The National Board of Health and Welfare [Socialstyrelsen]. Competence description for registered nurse [Kompetensbeskrivning för legitimerad sjuksköterska] 2005.

[32] Petersson (2011).

Emergency medical dispatchers

Emergency medical dispatchers are usually nurses assigned the position of emergency medical dispatcher. They co-listen to medical emergency calls and oversee ongoing medical emergency operations and use details about conditions and incident scenes of patients to make decisions. Dispatchers coordinate and prioritise medical emergencies according to symptoms of patients. They have an overall view of available ambulances in the county and dispatch the nearest ambulance team (Petersson 2011). Dispatchers also dispatch rapid response cars, emergency physician vehicles and air ambulance helicopters.

Emergency medical dispatchers assess conditions and care needs of patients via the medical index and professional expertise in, for instance, adding symptoms together, listen to the breathing of patients or hear what is not said, manage emergency details and send it on to pre-hospital care teams. They also supervise the emergency preparedness in the county, answer incoming telephone calls, document emergencies and co-operate with emergency control centre colleagues, ambulance teams, and the control officer of the air ambulance helicopters that lift and land on roofs of the hospitals in the county. Emergency medical dispatchers co-operate with other actors according to local SOS policy. Examples of these organisations may be the police, fire services and the Swedish Maritime administration[33].

During acute medical emergencies emergency medical dispatchers are in continuous contact with emergency call-takers and ambulance teams via the SMS-based broadcasting tool Mobitext used to communicate to a large group of emergency response persons. They also communicate via radio communication, the digital communication system RAKEL and mobile telephones of ambulance teams. By collecting detailed information in medical emergency calls call-takers prepare for the caretaking procedure performed by ambulance teams at incident scenes. Ambulance teams use this information as diagnostic support when they care for patients.

Emergency call-takers, emergency medical dispatchers and the ambulance teams work together as a collaborating emergency response team in parallel contingent emergency response processes. Call-takers, dispatchers and ambulance team members are at the same time individually responsible for their decisions in medical emergency operations. Emergency medical dispatchers have extensive knowledge about the pre-hospital emergency care field and how ambulance services work. They ask questions and make professional reflections from the perspectives of both emergency medical dispatchers and ambulance teams to find out details about, for instance, patients' symptoms, medical statuses upon arrival of ambulance services, needs of pre-hospital acute care interventions, medical statuses of patients during ambulance transports to hospitals, and needs of other possible transport

[33] Interview with an emergency medical dispatcher on 23rd September 2015.

vehicles. Common ambulance requests are transports from hospital to hospital. In my interviews with emergency medical dispatchers and emergency call-takers they mention that they sometimes experience stress when managing medical emergencies. A method to manage stress in medical emergency call operations is to focus on one call at a time[34].

In sum, the functioning of the emergency control centre team is characterised by an emergency response organisation with multi-disciplinary team members' possessing different emergency identities and roles, responsibilities and perspectives, a distinct sense of leadership, and frequent formal and informal communication between the professional individuals and groups with the goal for team members to support each other and cooperate to saves lives and care for patients.

Ambulance services

The primary areas of responsibility for the ambulance services include saving lives, providing treatment, stabilisation and care of acutely ill and injured patients, and transporting patients to hospital emergency departments[35]. When people are injured, for instance, in a road traffic accident, the ambulance services assess which patients should receive which kinds of attention in which order of priority. The ambulance medical care in the county council that I have studied is comprised of the county ambulance helicopter service (two air ambulance helicopters in the summer and one in the winter), fifty nine ambulances, ten transport ambulances, two rapid response cars, one emergency physician vehicle and one psychiatric service ambulance. The county council also uses an intensive care ambulance and an ambulance for transports outside the county. The ambulance teams are commissioned by the county council and prioritised and dispatched by emergency medical dispatchers in the emergency control centre.

The ambulance team is consists of an ambulance nurse and an ambulance technician. The ambulance nurse has a Swedish registered nurse license and a one year full time specialist nurse education in medical emergency care. The ambulance technician is generally an assistant nurse with a 20 week ambulance technician education. The organisation of pre-hospital emergency medical care is regulated by the National Board of Health and Welfare, a government agency in Sweden under the Ministry of Health and Social Affairs, (SOSFS 1995:8) and Swedish laws (SFS 1994:953).

[34] Interview with an emergency medical dispatcher on 23rd September 2015.

[35] Interview with an emergency call-taker on 23rd September 2015.

Discussion

In this chapter, I have presented medical emergency calls in context using ethnographic data to reveal and explain basic organisational contexts of the emergency response organisation, and principles, practices, work tasks, professional knowledge, goal orientations and shared meanings of emergency call-takers when talking to callers in medical emergency calls.

Central practices performed by the emergency operation participants include: (1) The caller making the telephone call to the emergency number 112 which initiates the medical emergency call process. (2) The call-taker asking the initial standard question "SOS 112 what has happened?" and the caller presenting the problem and/or requesting help. (3) The call-taker questioning the caller and talks the caller through emergency events. The call-taker follows the medical index of the emergency control centre in the questioning taking essential details about the nature of the problem, the patient's conditions, the exact location and whether the casualty is conscious and breathing normally. When carrying out the questioning the call-taker often gives concrete first aid and emergency response instructions to the caller. Even if the organisation directs medical emergency calls with the medical index boxes on the computer is it the individual call-takers and callers that accomplish the calls together. Call-takers and callers have a range of opportunities to act and have options among alternative courses of action. (4) The call-taker identifies if the problem presentation warrants ambulance assistance. Already at this point the call-taker may connect the emergency medical dispatcher for co-listening of the call in order to dispatch ambulance teams during the call. (5) The emergency medical dispatcher listens in to calls, assesses the emergency details that call-takers have collected, prioritises needs of patients and make decisions about which ambulance teams to send to patients at incident scenes. (6) The ambulance team cares for the patient at the incident scene and transports the patient to the hospital emergency department. When the ambulance team consisting of an ambulance nurse and ambulance technician goes to the patient they use the information collected by the call-taker to locate patients and incident scenes. (7) The emergency medical dispatcher and the ambulance team carry out an emergency event evaluation focused on the ambulance assistance performance and outcomes.

The ethnographic fieldwork observations from the emergency control centre illustrate a multidimensional team effort performed by call-takers in acute emergency situations. In emergencies and less acute situations, I have observed normative frameworks, professional status hierarchies and positions, and power structures based on the routines and social interactions in the various groups and social formations of the emergency control centre in which the emergency control centre management and the emergency control centre physicians have the highest

status with accompanying privileges exampled in decision-making and rights to talk first, followed by nurses and then emergency call operators.

The observational field note analysis demonstrates characteristics of the emergency control centre employees as showing strong solidarity and cooperation among themselves, processing routines of traumatic experiences, and advanced social skills and multi skills in managing multiple complex tasks simultaneously under heavy time pressure. Between emergencies call-takers often talk about serious incidents that they have dealt with at work and sometimes also how they feel. In very serious emergencies the emergency control centre arranges a debriefing session with the professionals that was involved in the emergency including, for instance, call-takers, ambulance teams and other social actors. My conversations with emergency control centre and ambulance service professionals reveal that the two professional groups usually can handle what they had experienced at work. Professionals who have experienced traumatic emergencies told me that they have found it difficult to let go and deal with what they have experienced especially when children have been involved. In isolated cases, emergency control centre and ambulance service members chose to terminate their employment because of the traumatic experiences. The thesis has four empirical chapters on recurrent interactive procedures in medical emergency calls (chapters 5-8) which will be presented next beginning with questioning.

5 Questioning in medical emergency calls

Introduction to questioning in medical emergency calls

Questions are central building blocks in medical emergency calls. This chapter investigates questioning practices in medical emergency calls. I will present perspectives of emergency call-takers when questioning callers in medical emergency calls with a focus on varying issues including: (1) the overall phase structure in medical emergency calls; (2) how the call-taker questioning is based in the medical index of the emergency control centre; (3) caller resistance to questioning in medical emergency calls; (4) questioning practices call-takers use to clarify problems and (5) question and response formats in questioning about acutely ill or injured patients.

Perspectives of emergency call-takers when questioning callers in medical emergency calls

My past research on Swedish medical emergency calls (Hedman 1997) described the overall phase structure of emergency calls, and I argued that callers requesting ambulance assistance are usually not aware that emergency medical dispatchers send out ambulance teams during the calls. Consequently, it is important for call-takers to inform callers about what is going on in emergency response operations and if it is an ambulance warranting incident update callers that while medical emergency calls are going on ambulance teams are dispatched to patients. This message may be delivered to callers with reassuring statements to make callers calm, stay on the phone and answer questions until ambulance teams arrive at incident scenes. An orientation of callers is often that when medical emergency calls have ended then the ambulance will be dispatched to patients.

The arrangement of a call has a particular outline formatting the interaction. Action sequences in the Swedish medical emergency calls in my data corpus are collaboratively achieved by emergency call operators, nurses, physicians and callers, and have a particular overall structural organisation composed of five phases presented in Table 3 (Hedman 1997).

Table 3
Phase structure of Swedish medical emergency calls

PHASE	*PRACTICE*
Opening	The emergency call operator or the nurse and the caller establish a social contact through an identification and/or recognition sequence when the emergency call operator or the nurse asks what has happened.
Request for help	The caller requests help often with an ambulance request and/or a problem presentation.
Questioning	The emergency call operator or the nurse questions the caller through questioning-answering-verification sequences to elicit details about a possible emergency. In more serious medical emergency calls or in calls with undefined problems the emergency call operator or nurse may transfer the call to a physician who continues the questioning of the caller.
Response	The emergency call operator, nurse or physician responds to the request for help often with a granting of ambulance assistance.
Closing	The call is routinely ended by the emergency call-taker.

The first phase is the opening section in which the emergency call-taker and caller present and align their identities as service seeker and service provider. This is also when the call-taker asks what has happened. The second phase is the request for help and/or problem presentation by the caller. The third phase is the questioning phase which provides a resource for call-takers to elicit details about the possible emergency in order to decide if the medical condition or symptoms of the patient is serious enough to promise assistance. Sequentially, the questioning phase is placed within the beginning and the ending parts of an adjacency pair sequence. The questioning in medical emergency calls is accomplished as an insertion sequence around the first pair part (request for help) and the second pair part of a base adjacency pair (a response to the request for help) discerning the routes of action sequences in medical emergency calls. The request for help executes a commencing action, a first pair part which executes receptive actions, second pair parts in the shape of an approval or denial of assistance. The sequential arrangement of the request and its reply maintains the notion that the adjacency pair framework is the basis to the social organisation of human social action in medical emergency calls.

The fourth phase is the response to the request for help often often in the shape of a granting ambulance assistance. The final phase is the closing segment which is dedicated to managing a coordinated departure from the medical emergency call. Every segment of the call produces an ordered sequential reality that makes sense and is credible in this given societal context. The medical emergency call phases are mutually oriented to or co-constructed by emergency call operators, nurses, physicians and callers as undertakings to be attained within the calls. The following

medical emergency call in Excerpt 5:1 exhibits the outline of this overall phase structure in its simplest form.

Excerpt 5:1 [Diabetes coma] (43A17)

1 N→SOS. **[Opening]**

---

2 C→.hh Ja hej ja vill ha en ambulans till [address]. **[Request for help]**
.hh Yes hello I want an ambulance to [address].

---

3 N→Vad är det som har hänt? **[Questioning]**
What has happened?

4 C .hh Det är min man en diabetiker han är i koma här.
.hh It is my husband a diabetic he is in a coma here.

5 N M[m] du får ing kontakt med han?
M[m] you do not get any contact with him?

6 C [hh]

7 C Nä.
No.

8 N Telefonnumret där?
Phone number there?

9 C Öh [Phone number].
Eh [Phone number].

10 N Mm. [Address]?
Mm. [Address]?

11 C [Address]

12 N [Address]

13 C .hhja
.hh yes

14 N Är det nån kod i porten?
Is there any code at the gate?

15 C [Code]

16 (1.0)

17 C Den ska väl va öppen nu va jo det borde den ju va va.
It should be open now right yes it should be right.

18 N Ja ja men ifall den inte är det då,
Yes yes but what if it is not then,

19 C Ja [då tittar ja,
Yes [then I look,

20 N [Hur va namnet då?
[**How was the name then?**

21 C **[Last name]**

22 N **[Last name]**

23 C Mm.

24 N Hur gammal är han?
How old is he?

25 C Öh femtitre.
Eh fifty three.

26 N Femtitre å[r
Fifty three y[ears

27 C [.hja
[yes

---

28 N→Mm dom kommer. **[Response to request**
Mm they come. for help]

---

29 C→Ta[ck hej. **[Closing]**
Th[anks bye.

30 N [Tack hej.
[**Thanks bye.**

The task focus of Swedish medical emergency calls is exampled in that the ambulance granting statement is routinely treated by callers as the closing of the call. In some calls the emergency call operator, the nurse or the physician instructs the caller to not hang up the phone after the ambulance has been granted in order to keep the caller on the line. The purpose with this instruction is for call-takers to be able to continue questioning callers on the topic of current medical conditions of patients or other emergency related issues until ambulance teams arrive to patients and incident scenes.

Comparing the overall phase structure in medical emergency calls and the overall organisation in doctor-patient interaction some observations can be made. Robinson and Heritage (2005) demonstrate that consultations between primary-care physicians and patients with acute problems in the United States and United Kingdom are organised into six phases: (1) opening (e.g., greeting, sitting down,

etc.), (2) presentation of concerns, (3) information gathering (i.e., history taking and physical examination), (4) diagnosis (evaluation of the condition(s) of the patient), (5) treatment, and (6) closing (e.g., leave-taking) (for a review, see Robinson 2003).

Similarities between the two types of institutional interaction is that the second phase involves presentation of concerns and/or requests for help with the difference that callers in medical emergency calls routinely request ambulance assistance. The third phase is similar in that the professionals question, gather information and assess conditions of patients in both types of institutional interaction. In medical emergency calls call-takers base their assessments on verbal interaction while physicians in face-to-face consultations with patients are able to conduct physical examinations of and treat patients. In medical emergency calls call-takers routinely provide measure instructions to callers to save lives and improve conditons of patients before the arrival of ambulance teams.

Questioning based in the medical index of the emergency control centre

Emergency call-takers refer to the institutional questioning in medical emergency calls as the medical interview[36] in which call-takers ask questions and lay callers answer them. The emergency control centre partially steers what questions call-takers ask callers in medical emergency calls based in the question boxes on the computers. The questions on the computer screen are grounded in the criteria designed question, advice and decision support index The Swedish Index for Emergency Medical Alarm Reception (2001)[37]. The index supports call-takers in their assessments in the medical interview[38]. Call-takers refer to the index as the medical index or "the care index"[39]. The decision support index on the computer includes a list of acute conditions with guidelines of prioritisation, advice to patients and additional questions. Local care programmes in the county councils of Sweden contribute to that the index may be used differently in the Swedish emergency control centres. Priority 1 and 2 emergencies routinely involve questioning and advice-giving. Priority 3 events involves minimal questioning[40].

[36] Personal communication with an SOS Alarm professional on 21st February 2014.

[37] Since 2007-2008 the document *The Swedish Index for Emergency Medical Alarm Reception* (2001) is integrated in the emergency response system on the computers of the emergency call-takers. Personal communication with an SOS Alarm professional 18th December 2013.

[38] Personal communication with an SOS Alarm professional on 21st February 2014.

[39] Personal communication with a call-taker on 11th December 2014 and an SOS Alarm professional on 21st February 2014.

[40] Interview with an emergency medical dispatcher in the emergency control centre on 23rd September 2015.

In the medical interview of emergency calls the call-taker questions the caller to collect relevant details about emergency events and medical conditions of patients. The call-taker routinely follows an overall process order in the medical emergency call asking standard questions in the index. First, the call-taker asks the caller what has happened. Second, the call-taker ensures the exact position of the patient or the accident. Third, the call-taker asks questions about if the patient is awake and can respond and if the breathing of the patient is affected. When the call-taker has received a confirmation from the caller that the patient is awake and is breathing normally the call-taker ask about what the problem is and if it is relevant when the problem started and how old the patient is. If time permits the call-taker asks for the name of the patient.

If the problem is clarified the call-taker is transferred in the medical index. The next task for the call-taker is to identify the main symptom or reason for the medical emergency call. From the details emerging in the problem description presented by the caller a specific chapter in the medical index is used, for instance, the chapter on "Cessation of Breathing". An interview and question support is connected to each chapter as an aid for emergency call-takers in their assessments and handling of incidents. The call-taker follows the relevant chapter in the medical decision support index, and should receive answers to the standard questions in the top down order of the care index on the computer. In case the caller answers yes to one of the questions the other questions are deleted and the call-taker continues to be guided by the medical index. If the problem is undefined the call-taker continues the questioning based in index section on undefined problems.

The set of standardised questions and criteria in the medical index provides a topical agenda to base the questioning in. Depending on how the caller replies to the questions and what criteria are met the case is given a certain priority. When the call-taker collects details about an emergency event she or he writes the name and the person number of the patient, checks a box in case the event is urgent or not and via a drop-down list on the computer the extent of the incident. They also type additional information about the event including a more or less detailed problem description in an abbreviated format, for instance, "a traffic accident, 2 persons", select via a drop-down list the type of emergency, for example, "Accidents (Trauma)", and write the address, position, directions, type of housing, municipality, area, phone number and care needs of patients.

Prioritisations are made according to assessment criteria under each type of medical condition and are based on the severity of patients' symptoms, medical status or trauma mechanism. Emergency call-takers choose from 30 different types of medical conditions:

1. Allergy
2. Breathing difficulties
3. Children - poisoning
4. Children - disease
5. Ordered ambulance missions
6. Bleeding not trauma
7. Burn - electrical injury
8. Chest pain - heart disease
9. Abdomen - urinary disorders
10. Diabetes
11. Animal bites - insect stings
12. Drowning
13. Diving accident
14. Limbs - minor injuries
15. Fever
16. Poisoning - overdose
17. Childbirth
18. Gynaecology - pregnancy
19. Headache
20. Hypo - hyperthermia
21. Chemicals - gases
22. Seizures
23. Unconsciousness - adult
24. Undefined problems
25. Accidents - trauma
26. Back pain
27. Stroke - paralysis
28. Suicide - psychiatry
29. Violence - assault
30. Eye - Ear - Nose – Throat

At times persons do not fit into a particular category when call-takers ask additional questions to clarify what the problem is about. When a certain type is chosen a checklist with advice is displayed in one box and additional questions in another box. The first problem type code is 01 “Allergic reaction” which is divided into four columns. This is also the case with the other categories.

- The first column includes criteria for prioritization level 1 as, for instance, “Do not react when spoken to and shakings” and prioritisation levels 2, 3 and 4.
- The second column: If necessary the call-taker writes information about local routines relevant for the particular emergency control centre.

- The third is an advice column (e.g., about allergic reaction).
- The fourth column consists of additional questions (for instance, “Previous allergy” and “Current event”).

In-depth texts are available in the end of the medical index about, for example, allergic reactions, vital information, serious symptoms and specific medications.

Caller resistance to questioning in medical emergency calls

Emergency call-takers are expected to control medical emergency calls by questioning callers and callers are expected to answer. However, sometimes callers design responses as resistance to or rejection of the questioning activity. I will here describe and analyse how a caller expresses this resistance and rejection and how the emergency call-taker manages these types of interactive problems.

The field of attention of a caller faced with life-threatening crisis may narrow drastically. It is common for emergency call-takers to encounter anxiety, frustration and anger from callers, when calls do not unfold as callers expected. In Excerpt 5:2, a woman’s husband is having a heart attack when nothing matters besides executing the sequence of steps that she believes will bring an ambulance to her husband. The woman pleads repeatedly “Come now”, as the emergency call operator works through a scripted list of questions designed to identify what has happened.

The caller presents the diagnosis of the patient in her first utterance. In this call, the emergency call operator carries out the questioning with standard questions and additional queries about the condition of the patient. A calm matter of factness presentation of the emergency by the caller seen in other medical emergency calls is not visible in this call. By hyperventilating, talking fast and loud and verbally making resistance to the questioning the caller displays high levels of anxiety throughout the call and repeatedly demonstrates that she does not understand why the emergency call operator continues to ask questions. The emergency call operator formulates questions from the institutional perspective to collect details about the pain, breathing and consciousness of the patient.

Extract 5:2 [Heart attack] (43A4:25)

1 O SOS Ala:rm.

2 C→Ja ja har- min man har hjärtinfarkt hh .hh
Yes I have- my husband has infarct of the heart hh .hh

3 (0.8)

4 C Hallå?
Hello?

5 O Ja.
Yes.

6 C Ja [d-
Yes [d-

7 O [Vadå har han fått det nu ell[er?
[What did he get it now o[r?

8C→Ja ja.
Yes yes.

9 O Ja.
Yes.

10 C <Han har haft det förut [address] i [name of suburb] .>
<He has had it before [address] in [name of suburb].>

11 O Vad har ni för telefonnummer där?
What is your telephone number there?

12 C **[Telephone number].**

13 O Mm.

14C→<Ni måste komma med detsamma.> (anxious voice)
<You must come immediately .> (anxious voice)

15 O Ja vilken address är det?
Yes what address is it?

16 C [Address] hh .hh

17 O Ja.
Yes.

18C→hh .hh [area] hh .hh

19 O Var i [area] i vilket område är det?
Where in [area] in what area is it?

20C→Ja lilla vän [area].
Yes little friend [area].

21 O Vid [area].
At [area].

22 C =Ja.
=Yes.

23 O Är det villa ni b[or i näj?=
Is it house you l[ive in no?=

24 C [Ja.
[Yes.

25 C =Ja ganska nära i- hh .hh
=Yes rather close in- hh .hh

26 O Vad heter han då?
What is his name then?

27 C VA?
WHAT?

28 O Vad heter han?
What is his name?

29 C [Last name and full name].=

30 O Ja hur gammal är han?
Yes how old is he?

31C→[Age] kom nu⊇ hh .hh (anxious voice)
[Age] kom nu⊇ hh .hh (anxious voice)

32 O Ja de- de kommer.
Yes they- they're coming.

33 C Ja.
Yes.

34 O Hur mår han nu då?
How is he now then?

35C→>Han mår jättedåli::t < hh .hh (anxious voice)
>He is feeling really bad< hh .hh (anxious voice)

36 O Ja på vilket sätt?
Yes in what way?

37C→Ja men han mår jättedålit kom nu: (anxious voice)
Yes but he feels really bad come now (anxious voice)

38 vi har haft det förut. hh .hh (anxious voice)
we have had it before. hh .hh (anxious voice)

39 O Ja ja förstår men de ä[r på väg till dej.
Yes I understand but they a[re on their way to you.

40 C [hh .hh ja bra:
[hh .hh yes good

41 O Kan du bara svara på mina frågor,
Can you just answer my questions,

42C→JA::
YE::S

43O→HAR HAN ONT I BRÖSTET NU?
DOES HE HAVE PAIN IN THE CHEST NOW?

44C→JA::
YE::S

45O→Å HAR HAN VAKNAT AV DET ELLER?
AND DID HE WAKE UP BECAUSE OF IT OR?

46 C Nä han har suttit uppe å tittat på teve å OS hh .hh
No he has been sitting up and watching TV and the Olympic games hh .hh

47 O Ja.
Yes.

48 C <Han är dåli:>
<**He feels bad**>

49 O Så han har haft det i några timmar då?=
So he has had it for a couple of hours then?=

49C→>HAN HAR HJÄRTINFARKT VAD SÄGER DU:?< (anxious voice)
>**HE HAS INFARCT WHAT ARE YOU SAYING?< (anxious voice)**

50 O Men kan du svara på mina frågor?
But can you answer my questions?

51C→VADÅ FÖ:R?
WHY?

52 O Därför att det är bra för ambulanspersonalen att veta
Because it is good for the ambulance personnel to know

53 så mycket som möjligt.
as much as possible.

54C→=<JA HAN ÄR DÅLI: HAN- HAN MÅSTE TILL SJUKHU:SET>= (anxious voice)
=<**YES HE IS BAD HE- HE MUST TO THE HOSPITAL>= (anxious voice)**

55 O =Ja förstår att han är dåli har han svårt att andas?=
=I understand that he is bad does he have difficulty breathing?=

56C→=JA A: (anxious voice)
=YES: (anxious voice)

57 C Det har han?=
He has?=

58C→=JA:: (anxious voice)
=YES:: (anxious voice)

59 C Han är vaken å så?=
He is awake and so?=

60C→=JA::: (anxious voice)
=YES::: (anxious voice)

61 O Så att du kan prata mä han?=
So that you can talk to him?=

62C→=JA::: KOM NU. (anxious voice)
=YES::: COME NOW. (anxious voice)

63 O Ja de kommer.=
Yes they are coming.=

64 C =Ja. (anxious voice)
=Yes. (anxious voice)

65 O Hej.
Bye.

The myocardial infarction that the caller describes in the beginning of this call is an ambulance warranting problem in the medical emergency call context. The caller identifies as the wife of the patient. The emergency call operator ask standard questions about the phone number, address, name of the suburb, type of housing, name and age of the patient. The resistance to the questioning begins in the signals of the caller's impatience at line 8 "Yes yes" which is a milder form of disalignment and with stronger forms of disalignment with an anxious voice directing the call-taker to send ambulance assistance at line 14, with the breathing at line 18 and when the caller uses the pejorative term "little friend" to refer to the emergency call operator at line 20 disapproving of the questioning.

The emergency call operator is unable to convince the caller that she has perceived the incident as an ambulance relevant problem in the beginning of the call. It is not until when the caller urges to have an ambulance sent to her husband

immediately (31) that the caller can hear the ambulance granting by the emergency call operator (32). At line 31 the caller steps out of the answerer role and urges the call-taker to send an ambulance instead of doing what is expected of a caller in medical emergency calls; to wait for the emergency call operator to announce the decision about ambulance assistance.

After the standard question series, the emergency call operator inquires about the current state of the patient using an open question format "How is he now then?" (34). In a rushed way the caller hyperventilates and describes the acute state of the patient in a vague way (35). The emergency call operator asks the caller to specify in what way the patient is feeling bad showing that the problem is still undefined (36). For the caller it is relevant to end the call after that the ambulance has been granted which is not the case for the emergency call operator.

The caller is being oriented to end the call by providing a summary for the acute state of the patient, pleading and informing the emergency call operator that the patient has had infarct problems before (37-38). This summary is closing the call implicative. The caller resists the questioning activity by using the word "but" opposing to the questioning, repeating that her is husband is feeling really bad and not answering the symptom specification question about in what way the patient is feeling bad and by ordering the emergency call operator to send the ambulance team immediately. Consequently, the caller demonstrates that she believes that by continuing the questioning the emergency call operator exhibits that an assessment is still to be made. As a reply, the emergency call operator announces that the ambulance team is on its way to the patient (39) which the hyperventilating caller acknowledges and assesses in a positive way (40).

Opening up the caller's attempt to close the call (Schegloff and Sacks 1973) the emergency call operator probes the caller to answer the questions "But can you answer my questions?" (41) which the caller responds to by shouting "YES" (42) resisting the questioning. Instead of continuing to speak calmly the emergency call operator raises her voice when she is asking about the pain status of the patient (43). She is thus breaking the organisational norm of the emergency control centre to stay calm as an emergency call operator. The caller continues to cry "YES" as a response (44) again opposing to the questioning. The emergency call operator continues to breaking the organisational norm by having a loud volume when asking about how the symptoms of the patient started (45). It is not the emergency call operator but the caller that ends the shouting exchange sequence by answering the emergency call operator with a normal volume and a hyperventilated ending of the turn (46) which the emergency call operator responds to with normal voice (47).

When the emergency call operator asks about the longevity of the infarction (48) the caller replies by giving the diagnosis and showing non-understanding of the questioning with a loud and anxious voice (49). When the emergency call operator urges the caller to answer the questions (50) the caller objects to further questioning with the strongest demonstration of resistance in the call by using a "WHY" with

loud volume (51). Thus, the emergency call operator displays a substantive "justification" for the relevance of questioning and continues the questioning (52-53). The caller's resistance and non-understanding of why the emergency call operator continues to ask questions is then expressed again with loud volume when the caller accounts for the health status of the patient and the need to go to the hospital (54). The emergency call operator continues the questioning by inquiring about the breathing of the patient (55). The caller shows resistance to this question by responding with a loud volume (56). The operator asks for a verification of the breathing of the patient (57) which the caller expresses resistance to by using loud volume in her response (58). When the emergency call operator asks about the consciousness of the patient (59) the caller continues to be opposed to the questioning by using loud volume in her response (60). The emergency call operator checks with the caller if she can talk to the patient (61). The caller resists by answering the question and urging that assistance should be delivered with loud volume (62). The caller latches her responses to the asked questions and answers in a fast way with an anxiety filled voice. Finally, the emergency call operator promises ambulance assistance again (63) and the call comes to a close.

In every medical emergency call, call-takers co-operate with emergency medical dispatchers who send ambulances and other relevant emergency teams to patients and incident scenes while call-takers continue to question callers. In the above incident, the patient's life is immediately at risk. Therefore, any delay in the process of securing ambulance service will be clearly consequential for the caller's husband. The distressed caller repeatedly pleads for an ambulance to be sent to the patient. The pleading suggests that the questioning should be terminated and the emergency call operator should reassure the caller that an ambulance is on its way to the patient.

The issue in this call from the perspective of the emergency call operator is not whether help should be sent. The focus of the emergency call operator is to continue the questioning of the caller to gather important details to the ambulance crew about the patient's condition and where help should be sent. In that way the ambulance team will be more prepared when they arrive at the emergency scene. The emergency call operator knows that while the caller and she is talking the emergency medical dispatcher sends an ambulance to the patient. The caller does only partially understand this fact. The emergency call operator informs the caller that the request for service had been granted and that the ambulance is coming. The emergency call operator reassures the caller again about this relevant information. The caller responds with an acknowledging positive assessment but the ambulance promises are not calming the caller. She continues to reply to the questions with an accelerated and anxiety filled voice. The emergency call operator continues to ask supplementary questions on behalf of the ambulance service which the caller does not understand the reason for and thus expresses strong resistance to participating in the questioning activity. In the above sequences of talk the caller shows an

explicit non-understanding about why the emergency call operator continues to ask questions. The caller displays in her responses that the emergency call operator is not viewed as having confirmed the acute problem presentation of the caller. The result is therefore that her emotional stance towards the continous questioning by the emergency call operator is negative. The caller is oriented to the dyadic structure of the request for help-response structure in medical emergency calls.

In sum, it is the emergency call operator who asks the questions and the caller who answers them. The emergency call operator questions impose restrictions on responses. The caller response opportunities are thus considerably controlled in medical emergency calls. The response formats by the caller in this medical emergency call displays an asymmetric relationship between the emergency call operator and the caller. The analysis also demonstrates resistance as an interactional resource. I have focused on resistance methods employed by the caller in relation to the emergency call operator with an institutional mandate to question the caller. The caller actively resists questioning through an explicit non-understanding about why the emergency call operator continues to ask questions, disaligning, pleading, expressing high level of anxiety, hyperventilating, talking fast and loud and using a pejorative term when addressing the emergency call operator. The medical emergency call is here an arena of resistance work by the caller, where questioning participation is actively negotiated and where the caller and emergency call operator display divergent orientations and opposing identities.

Questioning for problem clarification in medical emergency calls

This section introduces questioning for problem clarification and the practical methods that call-takers and callers use to carry out the medical interview in emergency calls. Callers describe acute disease symptoms and events that caused problems for persons. Asking questions about patients' symptoms, problems and acute events in the medical emergency call context has a decisive importance in order to handle acute conditions of patients and provide relevant information to ambulance teams.

The problem clarifying questioning is initiated immediately in the medical emergency call opening when call-takers ask questions based in concrete, structured topics restricted to the medical index on the computer screen and the emergency call context. In the questioning, call-takers identify care needs of patients, analyse emergency situations, consider sending adequate ambulance assistance to the correct destination and patient, decide how fast the operation should be carried out and assess how acute the incident is. When clarifying problems call-takers start from

descriptions provided by callers. Even if callers describe problems in a precise way call-takers do not know what types of diagnoses patients have. In one group of medical emergency calls patients have previously made diagnoses that call-takers can relate to in the questioning.

In the medical interview of emergency calls call-takers collect particularities about events and investigate vital signs and vital functions of patients. Vital signs in clinical settings refer to breathing, pulse, blood pressure, glucose control, temperature and pain. In the medical emergency call context call-takers ask about, monitor and document patients' vital signs including breathing and pain. They also listen for warning signs that may be a consequence of changed vital signs. Call-takers investigate if medical conditions of patients are acute or not. They routinely view problems as undefined even if they are more or less clarified[41]. Callers usually present problems in the beginning of medical emergency calls. In response, call-takers listen carefully to accounts and emotional expressions of callers and ask questions in cautious and fact-finding ways.

Necessary conditions for an event to be an ambulance warranting problem in medical emergency calls are that callers account for acute and identifiable problems based in the criteria of the medical index. The institutional emergency control centre framework with formal responsibility requirements of call-takers contrain them to ask questions, assess events and give instructions. Call-takers cannot take anything for granted but have to carefully explore events using questioning. Common medical problems in medical emergency calls are chest pain, other types of pain and breathing problems.

Questioning about defined and undefined problems in medical emergency calls

The medical index of the emergency control centre makes a distinction between defined and undefined problems in medical emergency calls. An example of questioning about a defined problem in medical emergency calls may be about a patient with diabetes having acute complications. Diabetes is a category in the medical index on the computer of the call-taker. In one medical emergency call in my data, the caller presents his family relationship to the patient, the diagnosis and the unconsciousness of the patient. This diabetic patient is in a coma which is a life-threatening diabetes complication that causes unconsciousness. The call-taker confirms the description and performs matter of fact questioning about the unconsciousness status of the patient. The diagnosis, unconsciousness and address

[41] Interviews with an emergency control centre professional in 2014.

of the patient are presented by the caller in the beginning of the call. As a consequence, the call-taker only asks standard questions about the phone number, address, gate code, name and age of the patient without asking additional questions about the medical condition of the patient. Finally, the call-taker delivers the emergency response decision that an ambulance will be sent to the patient which is followed by the parties thanking and saying farewell to each other.

This is a typical call structure in emergency calls in which callers have described diagnoses and acute medical conditions in the beginning of calls. In questioning about defined problems call-takers usually have an orientation towards past institutional decisions after callers have presented one of the established diagnoses of medical care that can be found in the medical index. When callers present a diagnosis in the beginning of a medical emergency call call-takers use primarily closed-ended questions based in the medical index in order to steer the calls identifying particulars such as telephone numbers, names, addresses and ages of patients. The closed-ended question is employed to speedily receive specific details or to clarify emergency situations. The most important function of closed-ended questions is to confirm or dismiss information. Subject matters in the questioning by nurses after a presented diagnosis or medical condition in medical emergency calls are consciousness, breathing, bleeding, pain and medications. Callers usually respond to questioning after a presented diagnosis or medical conditions with yes- and no-answers or short descriptions. In other medical emergency calls in which diagnosis and acute medical conditions are presented the questioning by physicians concern breathing, cardiopulmonary resuscitation, current health condition, pain, symptoms such as cramp, durability of symptoms, medical history and medication.

Call-takers should according to the medical index collect a number of details when problems of patients are undefined. Questions are then about the general condition of the patient, if the patient has a known disease, uses medication on a regular basis and recently been hospitalised or gone through surgery. Questioning is also about symptoms and signs, i.e., when symptoms started, pain, fever and if the patient fainted. Additionally, call-takers ask questions about the psychosocial circumstances of patients, for instance, if the patient is without care and if the patient has the ability to take care of herself or himself. The medical index instructs call-takers to ask about the vital functions consciousness, breathing and circulation when incidents are about undefined problems. In that way they are able to assess the consciousness level and breathing of patients. In case the general questions in the medical index about undefined problems exhibit that vital functions are affected then that should be viewed as signs of serious or life-threatening disease or injury. If problems are clarified during medical emergency calls then call-takers are instructed by the medical index to go to the relevant information in the index about the specific medical condition, for instance, allergy, diabetes or drowning.

Recurrent interactive practices in questioning about undefined problems in medical emergency calls are that: (1) questioning about unexplained medical conditions are placed after vague problem descriptions; (2) emergency call-takers to a larger extent (compared to questioning after when callers present diagnoses and medical conditions) ask yes-no-questions based in the local circumstances of the incident; (3) when callers provide limited information about problems then call-takers ask additional questions about when and where the event occured and about the nature of the problem; (4) question themes are about clarifying problems, symptoms, preparations before the arrival of ambulance teams and creating action plans; and (5) callers respond both with short and extended answers in questioning about unexplained medical conditions.

An example of a medical emergency call about an unexplained medical condition is about a woman who has fainted presented in Excerpt 5:3.

Extract 5:3 [Fainted] (1A7 74)

4 N =Vad är det som har hänt?
=What has happened?

5 C >Det är min fru som- hon har svimmat på toa-
>It is my wife who- she has fainted in the bath-

6 toaletten här så< (1.0) å hon har fått en chock
bathroom here so< (1.0) and she has had a shock

7 å ja vet inte vad som hänt
and I don't know what happened

8 N Hur gammal är hon?
How old is she?

9 C Hon är fyrtiett.
She is forty one.

10 (1.0)

11 N Mm har det varit så här nån gång förut?=
Mm has she had this before?=

12 C >Nä.<
>**No.<**

19 N Mm å hon är inne på toaletten nu?
Mm and she is inside the bathroom now?

20 C >Ja har henne här på toaletten för hon svimmade
>**I have her here inside the bathroom because she fainted**

21 först hon vakna å hade fått en chock å jag vet inte
at first she woke up and had received a shock and I don't know

22 vad som hänt.
what had happened.

23 N Men hon är vaken nu eller?
But she is awake now or?

24 C >Ja hon är vaken nu hon e- hon kan inte- hon
>Yes she is awake now she is- she cannot- she

25 reagerar inte för hon ja vet inte hon [svettas så.
does not react because she I don't know she [sweats so.

In this example about a patient with an undefined condition the caller describes that his wife has fainted in the bathroom, was in a state of shock and he did not know what had occurred (5-7). As a response, the nurse asks about the age and the medical history of the patient "Mm has it been like this sometimes before?" (11) that the caller answers negatively to. The nurse continues the questioning with standard queries about telephone number, address and the location of the patient with a place suggestion. The caller confirms the location and repeats what has happened including the fainting and the state of shock and that he did not know what had happened (20-22). The first check list point in the medical index to ask under the category "Undefined problems" concerns vital functions and consciousness which the nurse does in this call "But she is awake now or?" (23). The nurse asks this question to attain a full picture of the general condition of the woman. In response, the caller describes that the patient is awake, does not react and that she sweats heavily which is verified by the nurse (24-25).

Extract 5:4 [Fainted] (1A7 74)

30 N Men hon var alltså- hon svimmade av på toaletten
But she was therefore- she fainted in the bathroom

31 förut sa du?
before you said?

32 C Ja (.) hon fick ont i ry:ggen,
Yes (.) she has had pain in the back,

33 N Ont i ryggen?
Pain in the back?

34 C Ja,
Yes,

35 N Mm (.) hon e i fyrtiårsåldern hon är inte gravid
Mm (.) she is in the forties she is not pregnant

36 eller nåt sånt?
or something like that?

37 C Nä:, hon är inte gravid.
No she is not pregnant.

38 N Ja låg hon avsvimmad en längre stund?
Yes was she fainted for a longer time?

39 C Ja: ungefär fem minuter (.) hon bara- det lät
Yes approximately fifteen minutes (.) she just - it sounded

40 från halsen som hon- hon andas bara (.) nånting[
from the throat as she- she is just breathing (.) something[

41 konstigt.
strange.

42 N [Mm

43 (2.0) å hon har inte visat de här tendenserna förut?=
(2.0) and she has not shown these tendencies before?

44 C =Nej.
=**No.**

45 N Nä.
No.

46 C Hon kan inte gå=
She cannot walk=

47 N =Nä.=
=No.=

The nurse informs the caller that she will connect a physician to the ongoing call. After a pause the nurse asks a question about the sequence of events (30-31). The caller describes the back pain of the patient (32) that the nurse delivers a control questions about (33). The nurse asks a diagnostic question about possible pregnancy or a similar condition (35-36). The caller denies the suggestion that his wife is pregnant (37). Next the nurse enquires about the durability of the patient's unconsciousness (38) that the caller responds to followed by a description of a

strange breathing of the patient in relation to the unconsciousness (39-41). The nurse continues by delivering a standard question about if the patient has experienced something similar in the past (42-43). After a pause the caller informs that the patient cannot walk (46). In the medical index in the section about undefined problems in medical emergency calls it is stated that a physician should do the final assessment, ask questions about medical history and diagnose the patient which are physician responsibilities. In the medical emergency call material nurses and physicians routinely ask questions about medical history. Physicians also asks diagnostic questions demonstrated in Excerpt 5:5 about the woman who fainted.

Extract 5:5 [Fainted] (1A7 74)

56 D Har hon vaknat till nu alltså kan- kan du prata mä
Did she woke up now therefore can- can you talk to

57 henne?
her?

58 C Nä (.) men hon reagerar inte va.
No (.) but she does not react right.

59 D Hon reagerar inte?
She does not react?

60 C Nä.
No.

61 D Nä.
No.

62 D Men hon andas [regelbundet (.) hela tiden har varit
But she is breathing [regularly (.) all the time has been

63 avsvimmad?
fainted?

64 C [Va ja.
[What yes.

65 C Ja.
Yes.

66 D Har hon ont- om du frågar om hon har ont nånstans?
Does she feel pain- if you ask if she has pain anywhere?

67 C Hon har ont å kan inte gå.
She has pain and can't walk.

When the physician enters the call he inititates diagnostic questioning on the level of consciousness, reaction status, breathing and pain. First, he asks about the level of consciousness of the patient (56-57) which the caller responds to by describing that it is not possible to contact the woman (58-59). Second, the physician delivers control questions about the reaction status of the patient (59). Third, he asks a status question about the patient's vital parametres breathing and unconsciousness (62-63). Fourth, he inquires with an additional vital parametre question about possible pain and instructs the caller to ask the woman about this (66). In response, the caller confirms that the patient feels pain and informs that she cannot walk (67). Fifth, the physician grants ambulance assistance and shortly after the promise the call is ended. Other medical emergency calls with questioning about unexplained medical conditions of patients concern breathing, unconsciousness, pain stomach, paralysis, fainting, vomiting blood or persons that shake.

I have now described interactive practices of how call-takers clarify problems in medical emergency calls through questioning. Call-takers often give instructions and describe measures after defined problem accounts. Undefined problem descriptions result in further exploratory and diagnostic questioning about vital parametres of patients which often has the consequence that problems move from being unexplained to having a more clarified status. In other medical emergencies problems are clarified at the point when ambulance services arrive to patients or when physicians in the hospital emergency departments diagnose patients.

Question formats in medical emergency calls

This section examines question formats that call-takers use in medical emergency calls. A central distinction is made in human social interaction between open-ended and closed-ended questions. The division between open- and closed-ended questions may be observed in the type of responses social actors give. Medical emergencies necessitate greater control by call-takers in handling patient symptoms and emergency events. As a consequence call-takers use almost exclusively closed-ended questions in medical emergency calls which means restricted initiative and control for callers. When call-takers employ closed-ended questions they ask callers to choose from a list of presented options. Call-takers ask the questions in medical emergency calls and as a result control the questioning activity by imposing agendas, preferences and by pressuring callers to respond. Three main groups of question designs are observed in medical emergency calls: (1) yes-no questions; (2) open-ended questions and (3) alternative questions. These varied question formats,

their interactional consequences and the actions they are utilised to achieve in medical emergency calls will be presented next.

Yes-no questions in medical emergency calls

The most common question format call-takers used in my data sets of medical emergency calls were polar questions or yes-no questions. They were usually responded to by callers with either a "yes" or "no" followed by an account. I will here provide a detailed description of how yes-no questions are designed in medical emergency calls. I will also present a particular type of yes-no questions used by call-takers in environments where some sort of assessment is relevant. Yes-no questions in medical calls for help are employed to collect details about patient symptoms and emergency events as materialised in the format and the receipt of these questions. Callers mainly reply with compliance responses. Yes-no questions are focused on symptoms, breathing, consciousness, medical conditions, pain, past medical histories, medications and treatments of patients.

Yes-no questions about past medical history

Call-takers use yes-no formatted history-taking questions to determine a patient's past medical history relevant to the acute illness. Features of the series of yes-no questions about past medical history taking in medical emergency calls include yes-no questions about how the current condition started, for instance, "When did the problems start?" and "What were you doing when this happened?" After asking when problems started call-takers may also add an "or?" to the question exampled in "No eh but feels thus did it come suddenly now or?" ("Nä öh men känner alltså kom det plötsligt nu eller?"). The interactive phenomenon of turn-ending "or" in Swedish conversations has been analysed by Lindström (1999a). Another type of yes-no question in the medical history taking is related to what it was that called forth emotions, feelings, and responses in patients exampled in yes-no questions such as "What makes this condition better or worse?" or "Did you take a medication?" An additional type concerns pain when asking callers to describe pain patients feel i.e., tearing, crushing, stabbing, pressure, and also past pain experiences. Call-takers ask questions about the severity of pain and its duration "How long has it been since the pain started?" They also inquire about what allergies patients have exampled in "Is the patient allergic to medications, food, or other substances?"

Call-takers ask about what past history may be relevant to the condition at hand exampled in "Has he been like this before?" ("Har han varit så där förut nån gång?"), "Has he had this kind of problems for a long time then?" ("Har han haft såna bekymmer länge då?"), "And she does not have these tendencies before?" ("Å hon har inte de här tendenserna förut?" and "Mm has he had trouble earlier with this?"

(”Mm har han haft besvär tidigare med det här?” Call-takers may also suggest and specify past medical history “But he has not been that he has fainted like this before?” (”Men han har inte varit så att han svimmat av så här förut?”), ”Has he been going to check-ups and such things” (”Har han gått på kontroller å sånt där?”, ”His kidneys have not worked that well then?” (”Hans njurar har inte fungerat så särskilt bra då?”) and ”Yes had she been passed out for a long time?” (”Ja låg hon avsvimmad en längre stund?”). Call-takers also ask about what events were leading up to the emergency event, for instance, “What where you doing just before the event happened or started?” and the duration of the medical condition.

The commmonly used yes-no question about past medical history in medical emergency calls “Have you had this before?” is a request for information used by call-takers to collect details from callers while placing the patient’s condition in a context for both the on-telephone conversation and possible measures callers carry out, and later for ambulance teams treating patients. When call-takers are uncertain about what the problem is about they ask additional history taking questions. In Swedish medical emergency calls the nurses and physicians consistently ask history taking questions about if patients have experienced similar acute medical conditions before. History taking questions are of critical importance in being designed to target the past medical history-construction practice of medical emergency calls. The past medical history question design of the formats used by nurses and physicians was defined as this-indexed and condition-specific. This-indexed question “Have you had this before?” refers back to the previously mentioned condition of the patient.

To analyse the nurses’ and physicians’ elicitation of and orientation to the patients’ past medical histories and the callers’ responses, excerpts of sequences from the medical emergency calls including history taking questions are presented below. In all of the answers callers provided condition-specific details to complete the reply. After the exchange about the past medical history of the patient was completed the nurse and physician directed questions toward a specific concern e.g., the level of consciousness of the patient.

Yes-no symptom questions in medical emergency calls

Call-takers consistently ask yes-no questions for confirmation about current symptoms. When suggesting symptoms they routinely end yes-no questions with an “or?” (“eller?”) exampled in “Yes and pain in the chest also or?” (“Ja å ont i bröstet också eller?”) creating a way for callers to agree to the suggestion or modify or deny the proposal. An exception is when call-takers provide double questions through attached yes-no questions for confirmation about current symptom, for instance, in “And now she is having it? Did she experience attacks of palpitation again?” (“Och nu håller hon på? Fick hon igen attacker av hjärtklappning?”). Call-takers also ask yes-no question symptom questions related to pain in different variations related to current pain, current pain localization and current pain and mobility. Furthermore,

they deliver yes-no question symptom questions for confirmation about current pain adding an “or?” (“eller?”), and yes-no questions about pain such as “Does the pain radiate?’ or “Is the pain located in one specific area?”.

Call-takers ask yes-no questions for confirmation about breathing. Varying forms of yes-no questions about breathing include yes-no questions about current breathing and no preferred yes-no questions for confirmation about current breathing exampled in “But she was not breath affected you said not?” (‘Men hon var inte andningspåverkad sa du nej?’) when the caller replies ”No beats very fast yes.” (”Nej klappar till väldigt fort ja.”). Call-takers may also deliver yes-no questions for confirmation about current breathing adding an “or” (“eller”) in the end of the turn. Moreover, call-takers pose yes-no symptom questions for confirmation about the type of breathing attached to information about past medical history exampled in “But she is breathing the whole time has been passed out?” (”Men hon andas regelbundet hela tiden har varit avsvimmad?”). Other variations are yes-no questions for confirmation about current symptom and breathing exampled in “She had palpitation you said how is it with the breathing there?” (“Hon hade hjärtklappning sa du hur är det med andningen där?”) and double questions through an attached yes-no condition acuteness assessment question and a breathing assessment question, for instance, “But is it critical now with the asthma or? Is it very difficult for her to breath or?” (”Men är det akut nu med astman eller? Har han mycket svårt att andas eller?”) when both questions end with “or”.

Call-takers ask yes-no questions for confirmation about medical conditions of patients. They also ask yes-no symptom questions for confirmation about current consciousness and yes-no symptom questions for confirmation about the current level of consciousness of the patient that prefer a no-reply exampled in “You don’t get any contact with him?” (“Du får ingen kontakt med honom?”). Another variation is yes-no symptom questions for confirmation about the current consciousness status ending with a time marker “now?” “(nu?)” and also “now or?” (“nu eller?”).

Yes-no questions about past medical history establishing longevity of patient conditions

Physicians and nurses recurrently question callers about the longevity of the medical conditions of patients as in Extract (5:6).

Extract (5:6) [Kidney problem] (1A17:111)

76D→Har han haft såna bekymmer
Has he had those kind of troubles

77 länge då?=
for a long time then?=

78 C =Nä nä nä de kom nu.
=No no no they came now.

In this fragment the physician asks about the longevity of the patient's condition (76-77) which the caller responds negatively to (78). In Extract (5:7), the caller is a district nurse situated in the home of a patient. The district nurse specifies portions of the patient's past medical history and diagnosis (10-11). The caller reports that the patient has problems again (13-14) which the nurse responds to by specifying the current problem in the form of a suggestion about the patient's heart problem (15-16). With this frequently used "yes-no interrogative" (Raymond 2000, 2003) the nurse interrogates further about the medical condition of the patient. This question is produced with a turn-ending or. The caller accounts for the longevity of the patient's chest pain and pain when breathing. The caller also informs about the blood pressure test with a satisfactory result and the anxiety that the patient experiences (17-24) which the nurse affirms (25). The excerpt ends with the request for ambulance assistance by the caller (26-27).

Extract (5:7) [Heart problem] (12A564)

10 C >Jo hon var nyligen inlagd
>Yes she was recently admitted

11 [hospital] för sitt hjärta<
[hospital] for her heart<

12 N Mm.
Mm.

13 C >Å hon har tydligen problem
>And she has apparently problem

14 nu igen här<=
now again here<=

15 N =Mm har hon ont i bröstet
=Mm does she have pain in the chest

16 nu eller?=
now or?=

17 C =>Hon har ont i bröstet å
=>She has pain in the chest and

18 hon har ont när hon andas
she has pain when she is breathing

19 → det är- hon har haft det hela natten
it is- she has had it all night long

20 å ja får titta till henne nu
and I have to check on her now

21 ja blodtrycket är bra
yes the blood pressure is good

22 hon är inte svettig hon är torr
she is not sweaty she is dry

23 å fin men hon är väldit väldit
and fine but she is very very

24 orolig här<
worried here<

25 N Mm.
Mm.

26 C Så hon bör nog åka in till
So she should probably go into

27 akuten igen.
the hospital emergency department again.

In this portion of the chapter, I have discussed the practice of questioning about past medical history in medical emergency calls. Yes-no questions are of critical importance in being designed to target the past medical history-construction practice of medical emergency calls functioning as a diagnostic support material.

Differing past medical history of the patient given by the caller

The past medical history given by callers is not always consistent. There can be a statement by the caller which is pronounced as a fact and understood so by the call handler. The discussion of the patient's condition is designed based on the details given by the caller. That is why the information from the caller is so pertinent. In Excerpts (5:8) and (5:9), details about a kidney transplant referring to the patient is given by the caller to the nurse and then later revoked when talking to the physician.

Extract (5:8) [Kidney problem] (1A17:111)

13 N Mm (1.0) han är alltså
Mm (1.0) he is accordingly

14 njursjuk?
suffering from kidney disease?

15 C Ja ja ja.
Yes yes yes.

16 N Eh har han[
Eh has he[

17C→ [Han har- har fått
[He has- has had

18 transplantation (.) transplantation
transplant (.) transplant

19 å sånt där han går på [hospital]
and such there he goes to [hospital]

20 tre gånger i veckan det är
three times per week it is

21 väldigt bråttom,
very urgent,

22 N Mm e han vaken nu?
Mm is he awake now?

The caller is stating that the patient has had a transplant (16-17). It is given as part of the information about the kidney disease of the patient. The caller does not state any doubts about the transplant having taken place in the exchange between the nurse and the caller. The importance of this first statement is that it creates a particular type of question asking if the patient is possibly waiting for a transplant. Interactional context of the situation is also created from this point as the other interactional participants will relate to the statement. The nurse responds to the account with the routinely used acknowledgment item "Mm" followed by an interrogative about the consciousness status of the patient (22). The second excerpt with the exchange between the physician and the caller about the same transplant topic is presented next in Excerpt 5:9.

Extract (5:9) [Kidney problem] (1A17:111)

142D Ja han hans njurar har inte fungerat
Yes he his kidneys haven't worked

143 så särskilt bra då?
that especially well then?

144C→Han har inga alls.
He doesn't have any.

145D Nänä jag tyckte jag uppfatta
No no I thought I perceived

146 som att han hade transplanterat.
as he had a transplant.

147 C Nä han har haft.
No he has had.

148D Jag trodde han hade en njure
I thought he had a kidney

149 med ett problem,
with a problem,

149C Nänä.
No no.

150D Han väntar kanske på?
He waits maybe for?

151C Javisst han kommer få.
Yes of course he will get.

152D Det har samlats lite för mycket
It has been collected little too much

153 (.) slaggprodukter nu den här gången.
(.) waste products now this time.

154C Nä jag vet inte ingen aning.
No I don't know no idea.

155D Mm.
Mm.

A contradictory statement by the caller about the patient not having any kidneys is given in the Excerpt 5:9 at line 144. The physician came into this discussion with the account given earlier by the caller that the patient had been going through a kidney transplant. Given the importance of this information produced by the caller it changes the orientation of the physician and how he approaches the caller about the patient. The physician is under the impression that the patient had a kidney with a problem (147). He expresses that he had a differing perspective on the situation.

With this new information the physician is then able to discuss the patient's problem with the caller (152-153).

In a more detailed examination, the patient gathers more information about the patient's kidneys "Yes he his kidneys haven't worked that well then" (142-143). The caller frames his response in a negated turn format (143) "He doesn't have any". The physician responds by verifying the information "No I think I perceived it as that he had a transplant" (144-145). In the following exchanges the caller repairs the mutual understanding regarding the patient's kidneys (147-150). The physician expresses his reasoning for the patient's kidney trouble "It has been collected too much (.) waste products now this time" (152-153) which the caller expresses cautiousness and uncertainty about (154) which is acknowledged by the physician (155).

The medication review in medical emergency calls

A central questioning activity in medical emergency calls is the medication review when call-takers ask about medications patients take. Call-takers perform the medication review to prepare for the treatment of patients when ambulance teams arrive at incident scenes exampled in the question "What medications is the patient currently taking?" Medication oriented yes-no questions are shaped in varying ways including yes-no questions for confirmation about medications with an "or?" ("eller?") in the end of the yes-no question exampled in "Is she taking any medicine for that or?" ("Tar hon nån medicin mot det eller?"), yes preferred yes-no questions about medications exampled in "Do you have some medications you use to take for?=" ("Har du några mediciner du brukar ta för?="), and yes preferred yes-no questions for confirmation about medication adding an "or?" ("eller?" in the end of the turn "Do you have [medication name] also or?" ("Har du [medication name] också eller?"). A variation is medication oriented yes-no questions for confirmation and condition identification suggestions adding "or something like that?" ("eller något sånt?"). Call-takers also deliver no preferred yes-no questions for confirmation about medication results, for instance, "And [medication name] is not helping?" ("Å [medication name] det hjälper inte?").

Medications patients take are crucial information for call-takers. Call-takers may ask about the reasons for taking a particular medication. Gathering the patient's current medications is necessary for the physician and the nurse when responding to the emergency on the phone and for the ambulance team when arriving to the patient.

The use of the medication oriented yes-no question 'Have you taken any pills for this?' combined with medication specification suggestions

The next point to be investigated is the use of the medication oriented yes-no question "Have you taken any pills for this?" combined with medication

specification suggestions. In Extract (5:10), the nurse inquires about the current medications of the patient.

Extract (5:10) [Heart problem] (8A362)

40N→Har du tagi några tabletter
Have you taken any pills

41 för det här?
for this?

42C→Ja har tagit hjärtmedicin.
I have taken heart medication.

43N→Nitromex eller?
Nitromex or?

44 C Nä:j ja kommer inte ihåg,
No I do not remember,

45N→Surbangil?

46 C Surbangil har ja tagi.
Surbangil I have taken.

47 N Ja men det har inte hjälpt nånting?
Yes but it has not helped in any way?

48 C Näj nä:.
No no:.

The nurse initiates the patient medication review with the yes-no question "Have you taken any pills for this?" (40-41) which the patient replies to with a general medication description "I have taken heart medication" which is a problematic utterance for the nurse (42) because the patient does not provide a name of the medication. The nurse suggests the name of a heart medication (43) which is doing a request for specification. The patient does not know the name of the medication (44). The nurse guesses again suggesting another name of a heart medication (45). The patient repairs the understanding by giving a positive answer to the question **"**Surbangil I have taken" (46). The nurse assesses the effects of taking the heart medication with a negatively framed question "Yes but it has not helped in any way?" (47) which the patient replies to negatively (48).

Identifying the current medication in the fragment we can see how the medication review is organised in a call between a nurse and a caller. In the following example the caller requests an ambulance for her mother who suffers from

palpitations and has previously had a myocardial infarct. The interactive context is introduced in Extract (5:11) including the presentation of the main complaint and the past medical history (5-7) followed by a question-answer sequence about possible chest pain (8-10) positioned before the examination of the actual medication review sequences.

Extract (5:11) [Palpitation] (2B152 242)

5 C Ja hon har fått hjärtklappning
Yes she has got palpitations

6 å hon har haft alltså hjärtinfarkt
and then she has had myocardial infarction

7 tidigare .hh så att jag vet inte.
earlier .hh so that I do not know.

8 N Har hon ont i bröstet eller?
Has she pain in the chest or?

9 C Nej det hade hon inte förra gången
No she did not have that last time

10 heller när hon hade det.
either when she had it.

Announcing of medication to confirm and/or eliciting additional medication

In Extract (5:12), the nurse and the caller continue later in the same call to talk about the medications of the patient.

Extract (5:12) (2B152 242)

44N→Öh då ska vi ta å titta till
Eh then we shall look

45 där å Furix sa du att
there and Furix you said that

46 att hon har tagit?
that she has taken?

47C→Sen tar hon Distalgesic
Then she takes Distalgesic

48 också mot värk alltså.
also for pain then.

Here the nurse announces the previously mentioned medication of the patient (44-46) with a probable purpose of verifying the medication which may also elicit additional medication details from the caller. The caller responds by giving the name of a supplementary medication (47-48).

Announcing of medication to confirm and/or eliciting additional medication with the yes-no question "Do you have any medications you usually take?"

A routine question in the medication review in medical emergency calls is "Do you have any medications you usually take?" Extract (5:13) between a nurse, an elderly patient and a caller demonstrates how it is provided and responded to by the patient.

Extract (5:13) (50A)

32N→Ja har du några medicationer
Yes have you any medications
Yes do you have any medications

33 du brukar ta för?=
you usually take for?=

34 P =Ja ja har tagit de
=Yes I have been taking they

35 ett ögonblick det ligger på
one moment it lie on

36 bord- på bordet på köksbordet
table- on the table on the kitchen table

37 kan du se vad den heter (0.2)
can you see the name (0.2)

38 ja tog en tablett å tuggade sönder=
I took a pill and chewed it=

At times patients are not aware of what kind of medications they take seen in this fragment (33-38). With the help of the caretaker the medication details can be relayed to the nurse which happens in this call.

Identifying the current medication – "Is she taking any medication for that or?"

Nurses routinely ask callers about if patients are taking any medications for different symptoms using a turn ending "or" (33) as presented in Extract (5:14). The turn ending "or" in Swedish may indicate a problem. In this call the "or" may be interpreted as leaving it open for something else than the first option in the turn for the caller to respond with the name(s) of the medication(s) or stating that the patient is not taking any medication at all.

Extract (5:14) (2B152 242)

32N→Tar hon nån medicin
Is she taking any medication

33 mot det eller?
for that or?

34 C Nej hon har inte någon medicin
No she has no medication

35 jo hon har Furix alltså.
yes she has Furix then.

36 N Å Furix det hjälper inte?
And Furix is not helping?

37 C Furix och kalium.
Furix and potassium.

After responding that the patient does not use any medication the caller states the exact name of the medication (34-35). The nurse replies by asking about the effect of the medication (36). The caller does not answer this question. Instead the caller lists the medications of the patient (37). Open-ended questions in medical emergency calls will discussed next.

Open-ended questions in medical emergency calls

Open-ended questions are rare in medical emergency calls. In ordinary conversations, people begin open-ended questions with question words such as "how" ("hur"), "what" ("vad"), "in what" ("på vilket"), "where" ("var"), "when" ("när") and "why" ("varför"). Open-ended questions in medical emergency calls invite callers to report about emergencies in a less restricted way than when they are asked yes-no questions limiting callers to a yes, no or an alternative short reply. Yes-no questions are routinely used by call-takers to collect details about emergencies

in a strictly controlled manner and may be followed by open-ended questions to collect additional details about how callers view emergency situations.

In medical emergency calls, call-takers use open-ended questions to ask callers about patient symptoms, past medical history and emergency events. Open questions permit callers to respond with less restrictions and are thus relevant when call-takers want to collect more details from callers about patients and emergency circumstances. Call-takers provide open-ended questions about conditions of patients exampled in ”How is the patient?” (“Hur mår patienten?”) and also in open-ended questions about patient conditions adding the temporal marker “now”, for instance, “How are you now?” (“Hur är läget nu?”). This format builds on the earlier description and is focused on the here-and-now. Open-ended questions are exampled in open-ended symptom specification questions such as “Yes in what way is he feeling bad?” (“Ja på vilket sätt mår han dåligt?”) and in open-ended questions about breathing assessment requests “How badly is she breathing?” (“Hur pass svårt har hon att andas?”). In Extract (5:15), the nurse and the caller confer about the breathing of the patient (22-29).

Extract (5:15) [Palpitation] (2B152 242)

22 N Hon har hjärtklappning sa du
She has palpitations you said

23 hur är det med andningen där?
how is it with the breathing there?

24 C Vadå?
What?

25 N Hur är det med eh,
How is it with eh,

26 C Nej men det är- hon är bara-
No but it is- she is only-

27 det är bara hjärtklappning
it is only palpitations

28 å hon har svårt å sitter då.
and she has difficulty and sits then.

29 N Kippar hon efter andningen
Is she gasping for breath

30 nånting eller?
something or?

31 C Nej det är det inte nej men hon är blek.
No it is not that no but she is pale.

From the questioning the nurse finds out that the patient has palpitations and is pale but do not have any difficulty breathing. The next step for the nurse is to find out what medications the patient takes. The last question format used in medical emergency calls is alternative questions.

Alternative questions in medical emergency calls

Alternative questions are rare in medical emergency calls. This next section will examine the primary context in which alternative questions can be found and analyse their relevance in medical emergency calls. Alternative questions are asked about different options, for instance, a permanent condition or recently initiated symptoms of patients, normal or different breathing, named medications or other medications and a named medication and another named medication. Alternative questioning in the medication review after the main complaint presentation is exampled in Extract (5:16) after the nurse has questioned the caller extensively when the physician enters the call.

Extract (5:16) [Palpitation] (2B152 242)

49 D Hallå [Name] läkare jag går
Hello [Name] physician I am going

50 med i samtalet också .hh
into the call too .hh

51 C Ja ringde igår det är det
I called yesterday it is that

52 att hon haft det tre gånger
that she had it three times

53 sådana där anfall av hjärtklappning då.
those attacks of palpitations then.

54D→Ja står hon bara på Furex eller
Yes does she have a prescription for Furex or

55 har hon andra hjärtmedicationer?
does she have other heart medications?

56 C Nej inga andra mediciner nej det har hon
No no other medications no she has
No no other medications no she

57 inte haft nej å nu håller det på.
not had no and now it is going on.
doesn't had any and now it is going on.

58 D Och nu håller hon på? Fick
And now she is having it? Did

59 hon igen attacker av hjärtklappning?
she have again attacks of palpitations?

After the caller accounts for the main complaint (51-53) the physician initiates the alternative questioning by stating the previously mentioned heart medication from the interaction between the nurse, the patient and the caller, and requesting a reply from the caller about other possible heart medications of the patient (54-55). The caller gives a negatively framed answer and points out that the palpitations are going on (56-57). The physician responds by asking the caller if the patient suffers from palpitation attacks (58-59). A common practice in questioning in medical emergency calls is listing alternative medications.

The practice of listing alternative medications

The practice of listing[42] alternative medications in Swedish medical emergency calls is routinely performed by physicians, nurses and callers. Background knowledge to this excerpt is that the caller has been talking to the emergency call operator up to a point when the emergency call operator asks to talk directly to the patient shown in Extract (5:17).

Extract (5:17) [Heart problem] (7A324)

36O→Var det Nitromex eller Surbangi[l?
Was is Nitromex or Surbangil?

37 P [Ja ett
[**Yes one**

38 ögonblick det ligger på köksbordet
moment it lies on the kitchen table

[42] Jeffersson (1990) examines list-construction as a task and resource in naturally occurring conversations.

39 eh (0.5) ett ögonblick ett ögonblick.
eh (0.5) one moment one moment.

40 O Mm.
Mm.

41C>P Ja det är Surbangil Surbangil.
Yes it is Surbangil Surbangil.

42P→ Ja det är Surbangil fem milligram.
Yes it is Surbangil five milligram.

43 O Det är Surbangil ja.
It is Surbangil yes.

44 P Fem milligram.
Five milligram.

45O→Har du Nitromex också eller?
Have you Nitromex also or?
Do you also have Nitromex or?

46 P Öh det har ja.
Eh that have I.
Eh I have that.

47 O Det har du ja.
That you have yes.

The sequence organisation of alternative medication questioning is usually a question and an answer and a sequence closing third, for instance, "It is [medication] yes" (43) or "That you have yes" (47). In this fragment the emergency call operator provides the patient with different alternative medications to confirm as the medications she is taking (36). The caller leaves to pick up the medication and later gives the name of the medication to the patient (41). The patient then relays the name of the medication to the emergency call operator adding details about the dosage (42). The emergency call operator verifies the name of the medication but leaves out the question of dosing in the confirmation (43). The patient responds by providing the dosage information again (44). The emergency call operator suggests the option that the patient might also be taking the other medication (45) mentioned earlier (36) which is affirmed by the patient (46) and verified by the emergency call operator (47).

Discussion

Emergency call-takers ask questions to get a clear picture of what is happening at incident scenes, and to manage symptoms of patients to help keep them safe until ambulance crews arrive. They pass the collected information from the questioning on to ambulance teams so that know what to do when they arrive at incident scenes. Call-takers carry out the medical questioning practice in medical emergency calls in a specific social order in that call-takers ask questions and callers answer questions. Emergency call-takers use mainly yes-no questions. Yes-no questions limit callers' responses during interaction to a yes or a no preface of the turn with a possible post-expansion by the caller. Call-takers orient to the upcoming decision to grant or reject the caller's ambulance request, and to being the experts who make the decisions and assessments in medical emergencies. These orientations are the results of a shared objective to achieve the medical emergency call. The analysis also shows that the questioning practice in medical emergency calls has unique features that make it different to questioning in other types of institutional interaction, such as the patient care orientation and the ambulance-related decision-making procedure. Medical emergency calls is similar to physician-patient and nurse-patient interactions in having the patient care orientation.

Call-takers clarify problems in medical emergency calls through questioning. They often give instructions and describes measures after defined problem accounts. Undefined problem descriptions result in further exploratory questioning about vital parametres of patients which often has the consequence that problems move from being unexplained to having a more clarified status. Questioning by call-takers are of critical importance in being designed to target the past medical history-construction practice. A social pattern in the past medical history questioning practice is that call-takers control the courses and contents of the calls by asking mainly yes-no questions about past medical histories of patients. Open-ended questions and alternative questions are rare in medical emergency calls.

Caller responses are routinely offered to sequence-initiating questions that makes them relevant. Response design varieties provided by callers in Swedish medical emergency calls include descriptions, acknowledgments, other-initiated repairs and non-responses. Callers answer most questions with a verbally aligned reply. Silent responses and disalignment are infrequent in this type of institutional interaction. Among response designs to yes-no questions, confirmations were more common than disconfirmations. Callers mainly respond with current symptom descriptions.

6 Managing emotions in medical emergency calls

Introduction to managing emotions in medical emergency calls

Chapter 6 examines emotion management practices of call-takers in medical emergency calls. When faced with medical emergencies, crises and unknown risks, as when patients' conditions change rapidly it is common for callers to react emotionally. These emotions may be viewed as expressions of that people's lives are at stake and that callers do not have control over their emotions and what is going on. Call-takers use varying methods to manage the emotional turmoil and psychological stress of callers. The methods include call-takers being calm and responding emphathetically to callers' social displays of emotions and actively calming down anxious, angry, frustrated, frightened and shocked callers. In the interviews, call-takers state that central norms in emergency calls are for call-takers to first empathize with callers' emotions and second to initiate and maintain a calm call environment throughout the calls. It is possible to distinguish interactive patterns in emotion management practices of medical emergency calls which I will present in this chapter.

Contexts and contents of managing emotions in medical emergency calls

Features of emotion management practices that will be discussed next include what circumstances and medical problems emotion management procedures are about and what main types of emotion management methods are carried out in medical emergency calls. Emotion management procedures in medical emergency calls have past, current and future dimensions. They are carried out by call-takers throughout medical emergency calls and are focused on what has happened so far in the

emergency, what is coming up in the near future in the emergency response operation and what to do in the worst possible situation.

Several types of feelings have the potential to create challenges, problems and concerns for call-takers and callers in the emergency response operations. Frustration, anger and anxiety are three emotional responses that may obstruct call-takers when conducting the medical interview in calls for help. The emergency control centre has therefore developed detailed operational plans and practices that manage callers' emotions. Anger may threaten emergency call norms and lead to a conflict between the call-taker and the caller and is rare in the emergency call data. Caller anxiety, on the other hand, is encountered by call-takers as a routine part of medical emergency calls. Anxious callers are upset, nervous, distracted, and uncomfortable. For that reason are callers not always able to hear or remember what call-takers say. The anxiety may interfere with the medical interview that call-takers carry out in interaction with callers. Anxious callers may need reassurances about what can be expected about the emergency response operations decreasing caller confusion in the heat of the moment making medical interviewing more efficient. In response to crisis[43] situations, call-takers routinely restore callers' confidence in believing in their abilities and capacities to handle emergencies. Callers may feel lost, confused, worried and can thus experience difficulties in taking in what is going on and describing events when acting in emotion.

This study will demonstrate that power asymmetries and hierarchical differences are exhibited in emotion management practices of medical emergency calls. They are related to, for instance, the participants' interactive and institutional knowledge, task and competence asymmetries, and asymmetries of participation as emergency management experts or novices. Emotion management practices display the epistemic asymmetry between the call-taker as the knowledgeable expert and the caller and/or patient as the recipient of emotion management actions as its fundamental feature. Call-takers in emergency calls carry out emotion management with an "institutional mandate". Callers in medical emergency calls routinely expect call-takers to manage emotions, and calm and reassure callers in relation to diverse needs and concerns.

Emotion management competencies and responsibilities are asymmetric in the medical emergency call context that make callers dependent on the emotion management expertise of the emergency control centre professionals. Call-takers have competence and experience in emotion management based on subject and background knowledge, knowledge about the emergency organisation and its way of responding to emergencies and that they through their call-taker roles dispose over different types of emotion management techniques.

[43] Crisis refers to "an acute emotional upset arising from situational, developmental, or social sources that results in a temporary inability to cope by means of one's usual problem-solving devices" (Hoff 2014:14).

Call-takers have comprehensive responsibilities in medical emergency calls based on their professional rights and capacities. The rights and responsibilities of callers are more restricted. Callers are regularly expected to be calm and manage their emotions in order to report about patient symptoms and emergency events, and follow instructions delivered by call-takers. Emotion management capacities of callers may be more or less advanced depending on their life experiences and abilities in responding to emergencies. When comparing call-takers and callers, emotion management skills of physicians, nurses and emergency call operators are incomparably much deeper and most of all more professional experience anchored than emotion management competencies of callers. Call-takers are institutionally responsible for patients in emergencies. Callers do not have any patient responsibility. When looking at asymmetries from the point of view of callers then callers have direct knowledge of and access to ongoing emergencies when they respond to questions, information and instructions of call-takers. Consequently, callers may have knowledge about current situations, symptoms and conditions, past illness history and life circumstances of patients. At the same time they may be vulnerable and afraid because emergencies may be about life and death issues of persons and many times it is about persons that they have close relationships to which may make them worry. Emergency events for callers are usually new situations. In contrast, emotion management practices in medical emergency calls is a routine activity for call-takers. The participants have for that reason different outlooks and norms in emotion management procedures in medical calls for help.

A distinction can be made in the analysis of medical emergency calls in that callers express emotions or risk expressing emotions, for instance, anxiety or anger. The analysis will demonstrate how call-takers orient to this distinction. Callers may be the person that is directly affected in the emergency. In most medical emergency calls callers are predominantly immediate family members, extended family, close friends, acquaintances and bystanders and not the actual patients. They are through their relations to the acutely ill or injured persons oftenly emotionally involved in the ongoing events. We can also assume that they are emotionally affected by the situation which can result in that they display emotions in the call interactions.

In performing their routine work tasks of the emergency control centre, call-takers are not directly emotionally involved in each of the ongoing emergencies. They are not at the sites of the emergencies and can therefore not see and hear what is going on. In this regard they are limited by what they can do and what type of data they can collect from callers about patient symptoms, past medical histories and emergency events. Call-takers engage in emotion management in order to gather data and assess and make decisions about emergencies.

Emotions may run high in medical emergency calls and emotional displays may be consequential for interaction. The emotion management process is characteristically prompted by the orientation of call-takers that callers are facing problematic situations and are in need of being calmed, reassured and other types of

emotional support. Emotion management practices in medical emergency calls carried out by call-takers are emergency organisational responses aiming to calm and support callers in order to immediately or in the near future handle emergency situations and patient symptoms.

In the beginning of medical emergency calls callers regularly inform call-takers what relationships they have to the acutely ill or injured persons. Call-takers can if the caller is a friend, acquaintance or relative of the patient assume that the caller is emotionally involved and affected. Professionals can also hear on the voices of the callers if they are emotionally affected by the emergency events. It thus requires great sensitivity and empathy in the interaction of call-takers to understand and assess patient symptoms and emergency events. Callers may not always be susceptible to emotion management practices because of the ongoing emergency situations which may make them feel anxious and stressed out when talking to call-takers.

Call-takers regulate their own and the callers' emotions and observe what is going on in emergencies. They organise their emotion management practices in medical emergency calls in order for the participants to orient to overall call goals that are not emotionally regulated such as the dispatch of ambulance assistance. Call-takers work to reduce strong emotions of callers that may obstruct and delay emergency response operations. I will now review different types of emotion management practices in medical emergency calls. The reader will be introduced to varying types of callers including calm callers responding in compliance to instructions by call-takers, worried callers, panic-stricken callers, frustrated callers and how these latter non-calm callers may be a problem for call-takers.

Emotion management practices in medical emergency calls

Emergency call-takers identify particular emotions, problems, options and possible emotion management practices, choose one or several emotion management methods, consider consequences for each method, plan to carry out emotion management methods and then perform emotion management procedures. Four main types of emotion management procedures and institutional tasks in medical emergency calls are presented in this chapter:

1. Call-takers keep themselves calm and manage callers' social displays of emotions
2. Granting ambulance assistance
3. Providing problem solving presentations to concerns of callers
4. Emphasising the positive to create hope for callers

A distinction in regards to calmness can be made here in the way call-takers interact when performing emotion management in medical emergency calls. First, it is the practice of being calm as an emergency call-taker by maintaining a calm state, calm voice, avoiding going up into emotions of callers, follow action sequences and staying on topic even if callers are screaming or challenging the emotional order of medical emergency calls. Second, it is the practice of doing calming through active efforts to calm down callers and manage their emotions by delivering decisions about emergency responses, problem solving, underlining the positive of the event and working to create hope for callers.

Call-takers keep themselves calm and manage callers' social display of emotions

According to the professional calmness norm of the emergency organisation, call-takers are expected to be emphatetic, listen with full focus and remain calm in the midst of emergencies and crises independent of if the callers are expressing emotions or not. Callers may convey pain in their voices, be distressed, panicky or have fearful thoughts which may impede their talking and may cause them to scream, talk too fast, too loud or too slow and show a temporary loss of control over their emotions. A basic institutional task and interactive norm and practice of call-takers used throughout medical emergency calls is to stay calm and avoid going up into callers' social display of emotions through a calm conversational tone of voice and choice of words, not raising the volume of the voice and not reacting to emotions of callers. These emotion management practices require that call-takers respond calmly and exhibit that they understand emotions of callers and abstain from vocal and verbal actions and reactions that may worsen an already tense and emotional event and create unnecessary feelings of anxiety, anger, confusion, or helplessness for callers.

Some general observations can be made about call-takers remaining calm and using a calm tone of voice in medical emergency calls. By utilising a gentle, calm tone of voice and breathing calmly and slowly call-takers work to create credibility and trust contacts with callers, and an atmosphere of hope for a positive development of the emergency. Call-takers habitually use an even and friendly tone of voice and control their talk volume and talk speed at a normal level when talking to callers. The emotional expression in the voices of call-takers may demonstrate concern for callers, patients and victims and let callers know that the emergency is professionally managed and that call-takers do everything they can to assist callers. The first fragment presented exhibits how the nurse remain calm even when the caller display being affected with a frustrated protest. Expressing considerations regarding emergency response operations may also pose a risk and potential problem for call-takers because it may worry callers or make them angry which may

have consequences for the medical emergency call interaction. In Excerpt 6:1 the nurse articulates an ambulance transport consideration related to what hospital the patient will be driven to (33-37) causing a frustrated reply by the caller.

Excerpt 6:1 [**Emphysema**] (8B388)

31 N Hur pass svårt har hon att andas?
How difficult is it for her to breath?

32 C Hon har mycket svårt att andas.
She has great difficulty breathing.

33 N→Mm för det är inte säkert att de åker in till
Mm because it is not sure that they go in to

34 [hospital [name]] i första läget då måste nån kanske
[hospital [name]] primarily then someone must maybe

35 göra en medicinsk bedömning å åka till via
make a medical assessment and go to via

36 → [hospital] eller nåt sånt där för att men vi ska
[hospital] or something like that because but we will

37 komma direkt där.
come directly there.

38 C VADÅ HON TILLHÖR JU [HOSPITAL NAME].
WHAT SHE BELONGS TO [HOSPITAL NAME].

39N→Ja men vi ska komma där direkt.
Yes but we will come directly there.

40 C Okej.
Okay.

41 N Mm.

42 C Tack hej.
Thank you bye.

In this call segment illustrating emotion management in medical emergency calls the nurse shares a transport consideration that the caller responds to with a frustrated protest. The caller here disapproves of the suggested hospital destination by showing non-understanding and displays being affected by shouting "WHAT" and the name of hospital the patient is connected to "WHAT SHE BELONGS TO [HOSPITAL NAME]." (38). The caller reacts in a frustrated manner even when the

nurse promised an ambulance in the previous turn. Responding to the protest of the caller, the nurse does not increase the volume and screams back but repeats the positive fact that the ambulance is coming immediately (39) which is a standard emotion management technique exhibiting the ambulance promise thus avoiding a further conflict with the caller. The change of topic by the nurse repeating the ambulance promise interrupts the caller's frustration, and it helps put the medical emergency call back on a positive path.

When call-takers express an ambulance transport consideration they open up for alternative transport routes. Callers may then feel insecure and out of control of the emergency response operation. Anger and frustration may be socially displayed when callers feel that the emergency response is not going in their way. It is important for call-takers to deal with feelings of anger and frustration rapidly, because they can easily lead to communication problems. Call-takers can deal with anger and frustration expressed by callers in different ways. Stating a positive aspect of the emergency situation such as the ambulance is coming often makes callers look at things in a different way. This small change in orientation may be a way to move on in medical emergency calls.

Call-takers stay calm in the majority of the data for this thesis. A deviant case is a medical emergency call about a patient suffering from an infarct of the heart. In this call the emergency call operator does not follow the organisational norms of staying calm and using a calm tone of voice. The caller (the spouse of the patient) talks fast and has an anxiety filled voice throughout this call. Her anxiety displays escalate in the end of the call when she repeatedly shouts "YES" in response to the call handler's questions. The emergency call operator is unable to calm this caller and after repeating the ambulance promise the call-taker closes the call. In one call segment when the caller raises her voice the call-taker responds by also raising her voice with increased volume tone at lines 41 and 43 which is presented in fragment 6:2.

Extract 6:2 [Heart attack] (43A4:25)

35 C >Han mår jättedåli::t < hh .hh (anxious voice)
>He is feeling really bad< hh .hh (anxious voice)

36 O Ja på vilket sätt?
Yes in what way?

37 C Ja men han mår jättedålit kom nu: (anxious voice)
Yes but he feels really bad come now (anxious voice)

38 vi har haft det förut. hh .hh (anxious voice)
we have had it before. hh .hh (anxious voice)

39 O Ja ja förstår men de ä[r på väg till dej.
Yes I understand but they are on their way to you.

40 C [hh .hh ja bra:
[hh .hh yes good

41 O Kan du bara svara på mina frågor,
Can you just answer my questions,

42 C→JA::
YE::S

43 O→HAR HAN ONT I BRÖSTET NU?
DOES HE HAVE PAIN IN THE CHEST NOW?

44 C→JA::
YE::S

45 O→Å HAR HAN VAKNAT AV DET ELLER?
AND DID HE WAKE UP BECAUSE OF IT OR?

When the emergency call operator probes the caller to answer the questions (39) the caller shouts "YES" (40). Instead of continuing to speak calmly the emergency call operator raises her voice when she is asking about the pain status of the patient (41) thus breaking an organisational norm of the emergency control centre of staying calm as a call-taker. The caller continues to cry "YES" as a response (42). The emergency call operator continues to break the organisational norm by having a loud volume when asking about how the symptoms of the patient started (43). It is not the emergency call operator but the caller that ends the shouting sequence by answering the emergency call operator with a normal volume, fast speed and hyperventilation (44-45) which the emergency call operator responds to with a normal voice (45).

When call-takers maintain a calm state by using a calm tone of voice and appear secure they work to construct a calm call environment. Callers are then more likely to feel safe and less worried. Call-takers listen to callers to see what types of reassurances and emotion management callers may need. Call-takers' calm and reassuring manner may convince callers that they have little to fear. The voices of call-takers may be viewed as projecting authority and knowledge, backed up by a certainty of what they are telling callers. In this recipient designed emotion management practice, call-takers create calm call environments using a calm tone of voice, information and reassurances relevant to the concerns and needs of each individual caller. Presenting emergency response decisions and more specifically promising an ambulance is a routinized measure delivered by call-takers securing the organisational decisions of granting ambulance assistance to callers which also

functions as a type of emotional management in medical emergency calls exampled in the emphysema call above as a response to the frustrated protest of the caller and also as an emotion management method to avoid the risk that callers would express emotions later in the call such as anger or worry.

Managing emotions by granting ambulance assistance

Granting ambulance assistance

Call-takers routinely manage callers' emotions by explaining that the ambulance is sent while the parties are talking. This type of emotion management practice has a decision making dimension in that it presents a forward plan and strategic route process of the emergency. This is a granting of the caller's emergency response request through an ambulance promise which meets the callers' needs of ambulance assistance. The ambulance granting is usually placed in the middle of a medical call for help or in the end as a response to the ambulance assistance request made by the caller in the beginning of the call. An example of when a call-taker promises ambulance assistance is presented in Excerpt 6:3.

Excerpt 6:3 [Chest pain] (8A:362)

45 C Surbangil har ja tagi.
Surbangil I have taken.

46 N Ja men det har inte hjälpt nånting?
Yes but it has not helped in any way?

47 C Näj nä:.
No no:.

48 N→.hh okej vi ska komma direkt där å hjälpa dej.
.hh okey we will come immediately there and help you.

49 C Ska du det?
Are you?

50 N Ja .h[h
Yes .h[h

By granting ambulance assistance the nurse reassures the caller that the ambulance crew is on the way to the patient (48). The nurse delivers committal reassurance in response to the ambulance request by the caller and include time information "immediately" in the promise. The reassuring tone of voice of the nurse displays an optimistic orientation creating hope for the caller that everything will be alright.

The majority of the ambulance promises in medical emergency calls are placed after the questioning phase in the end of the calls together with ambulance decision details whereupon medical emergency calls routinely are ended. Consequently, callers are left in uncertainty during the questioning phase of medical emergency calls even when emergency medical dispatchers have decided to send ambulance assistance during calls. In Extract 6:4 about a child with severe and possibly life-threatening asthma the reassuring instruction is positioned in the last turn of the call followed by the granting of the ambulance.

Extract 6:4 [Asthma] (20A979)

18 C Han är tolv år han har astma också vi tar en bil
He's twelve years old he has asthma also we take a car

19 å sitter å väntar vid vägen.
and sit and wait by the road.

20 O→Ja det är ju körtiden vid vägen gör så att ni
Yes it is the driving time by the road do that you

21 väntar kvar där då kommer vi.
wait there then we come.

After the presentation of concerns by the caller at lines 18-19 a granting or denial of ambulance assistance by the emergency call operator becomes relevant. The ambulance promise at lines 20-21 is delivered integrated with an instruction to the caller to stay at the emergency scene. Another variation of an ambulance promise is positioned in the end of the call shown in Extract 6:5 about a drowning emergency.

Extract 6:5 [Drowning] (19A)

110C Å det är nästan vid viken där.
And it is almost by the bay there.

111O→Då möter ni upp där så är de på väg.
Then you meet up there so they are on their way.

112C Det är br[a.
That is go[od.

In Extract 6:5 the call participants are about to end the call. The emergency call operator then launches an instruction about where to meet the air ambulance

helicopter crew and at the same time promises ambulance assistance. The caller responds with a positive assessment (112).

Granting ambulance assistance and engaging the caller in the problem solving process

The next variation of an ambulance promise is demonstrated in Extract 6:6 in which the nurse responds to a suicide emergency when a self-harming person has swallowed tablets and alcohol. The daughter of the patient reports about the incident. Cases of self-harm present special challenges for callers and call-takers. This instance of self-harm requires urgent ambulance assistance. Here the nurse grants ambulance service and instructs the caller to look out for the ambulance (46-47) and keeping the gate open (54-55) thus engaging the caller in the problem solving process which the caller recognises (48). The nurse gives reassurance by alternative action preparedness instructions about either keeping the door open or to look out for the ambulance crew which is followed by the granting of ambulance assistance (54-55) which the caller assesses positively (56).

Extract 6:6 [Suicide attempt by tablet overdose and acute alcohol intoxication] (8A344 98)

44 N Hon har blandat sprit å tabletter då?
She has mixed alcohol and tablets then?

45 C Ja,
Yes,

46N→Mm om vi skickar- <vi skickar ambulans direkt å
Mmhm if we send- <we send ambulance directly and

47 du kan väl hålla utkik efter den.>
you can surely keep a lookout for it.>

48 C Ja.
Yes.

49 N <Det finns väl ingen portkod eller nåt sånt där
<There is surely no gate code or something like that

50 däruppe eller?>
up there or?>

51 C Nä det är stängd port hh
No it's closed gate hh

52 N <Ja just det.>
<Yes that's correct.>

53 C .hhja
.hh yes

54N→ <Du kan väl ställa nånting emellan ( ) eller
<You can surely put something in between ( ) or

55 hålla utkik lite så ska vi komma direkt där.>
keep a lookout a little so are we going to come directly there.>

56 C Ja jättebra.
Yes great.

The nurse is oriented to that the caller is willing to help in the emergency response operation because the incident is about the caller's mother. Consequently, the call participants share responsibility for the safety and health of the patient which demonstrates that they are in agreement in saving the life of the self-harming woman. The turns with the lexical item "surely" ("väl") (47, 54) are delivered in a question format as an instruction. The format "Then it is just to make sure" does not even include a person anticipating that the participants cooperate. The reassurances (47, 54-55) concern significant details before the ambulance crew arrives in keeping a look after the ambulance and making sure that the gate is open. An ambulance has already been granted so the instruction is uncontroversial. Furthermore, the caller has previously shown that she cooperates in the call.

Sometimes call-takers use several emotion management practices to reach a consensus contact with callers as in Extract 6:6. A physician in Extracts 6:10 and 6:11 is also using several emotion management methods to reach a consensus contact with the caller. The method of using several emotion management practices has a double emotion management effect with a strategic structuration orientation benefit to keep medical emergency calls on track. This provides callers with a structure to hold on to during the calls knowing that an ambulance is on its way to the patient. At the same time, the practice is making callers involved in the emergency response by, for instance, being ready to carry out measures on patients and keeping gates open for ambulance teams. A similarity in these two calls is that call-takers use several emotion managent practices when children or young people are involved. In Extracts 6:10 and 6:11 we have a son calling the emergency number about his acutely ill father with a kidney problem. In 6:6 we have a daughter calling about her mother who tried to commit suicide. Another similarity is that both of these incidents concern life-threatening circumstances for patients.

A central aspect of the ambulance granting practice is reassurance. Based on their emergency response expertise call-takers calm emotionally upset callers by providing and enabling support through the use of caring, gentle and reinforcing words and tone of voice demonstrating an understanding of patient pain, symptoms,

events, callers' situations and emergency accounts. In Extract 6:7, the nurse reassures the patient that the ambulance crew is coming immediately in order to remove the pain of the patient. The nurse then topicalises pain and explains that the pain is passing. Pain is here presented as a short-term problem that soon will be solved.

Excerpt 6:7 [Chest pain] (30B)

50N→De kommer på en gång så du slipper
They will come right away so you don't need to

51 ha ont sörru.
feel pain you hear.

52 P Det är bra.
That's good.

In this call the patient has expressed that he experiences pain and the nurse promises ambulance assistance and pain removal (50-51) which the patient assesses positively (52). The nurse's statement at lines 50-51 creates predictability about the patient's pain process. It is orienting to physical pain and that the pain will end at the time of the arrival of the ambulance crew. The ambulance promise and pain management components are here combined. In the reassurance activity of calls for help call-takers routinely remain calm, act credible, express empathy and concerns for patients' worries.

Other variations of when call-takers promise ambulances include ambulance status updates informing callers that the ambulance crew is on its way hurrying to reach patients. Call-takers routinely use emotional neutrality expressions when talking to callers without going up into the worries of callers and at the same time reassuring callers that it soon will be alright. A variant is when call-takers repeat ambulance assistance status with a different participant structure shown in a call in which the spouse of the kidney patient inquires about the ambulance assistance status via the son of the patient who talks to the mother and is then answered by the nurse. Call-takers also instruct callers to look out for the ambulance, repeat the ambulance promise and give time details.

Managing emotions by problem solving presentations to concerns of callers

Problem solving through emergency response measure messages that callers will receive help

An emotion management calming technique that call-takers use to maintain a calm call environment in medical emergency calls is to present emergency response measures that will be carried out in the near future exampled in the expressions "bara att se till" ("just make sure") and "vi ska se till att någon" ("we'll arrange that someone"). The usage of the word "just" ("bara") is presenting emergency response measures as an easy practice to perform. In Excerpt 6:8, the nurse explains the way the ambulance crew will enter the building (32) and reassures the caller that it will work out (32, 34).

Excerpt 6:8 [Chest pain] (8A:362)

27 N Mm har du nån portkod där eller?
Mm do you have a gate code there or?

28 C Näj de är- porten är låst (.) å ja kan- ja har kry-
No they are- the gate is locked (.) and I can- I have craw-

29 krypit till min ytterdörr å satt upp den.
crawled to my door and opened it.

30 N Men porten kommer vi inte in i menar du eller?
But the gate we are not able to enter do you mean or?

31 C Nä,=
No,=

32N→=Nä vi får lösa det på nåt sätt va.
=No we have to fix that in some way right.

33 C Kan du göra det?
Can you do that?

34 N→Ja det fixar vi sörru du har ont i bröstet å har du öh?
Yes we will fix it you hear you have pain in the chest and have you eh?

The nurse demonstrates the relaxed and easy approach in the emergency response operation stating that the problem will be taken care of "=No we have to fix that in some way right" (32). Later in the same call the nurse reassures the caller that the ambulance crew is on its way to the patient and the specific problem of opening the gate will be solved (56) demonstrated in Excerpt 6:9.

Excerpt 6:9 [Chest pain] (8A:362)

51 C [Å ja kan inte plocka ifrån min- va ska ja säga .h[h
[**And I cannot take my- what should I say .h[h**

52 N [Å
[**And**

53 du ligger på golvet nu alltså?
you are lying on the floor now right?

54 C Ja ligger på golvet nu ja.
I lie on the floor now yes.

55 N Mm tack.
Mm thanks.

56N→Ja vi ska se till att nån kommer å öppnar din port där.
Yes we will see to someone coming and opens your gate there.

57 C Ja ja.
Yes yes.

In line 56, the nurse informs about the emergency response measure "Yes we will see to someone coming and opens your gate there". Call-takers deliver emergency response measures aiming to convince callers that everything will be alright. In this type of emotion management practice, call-takers maintain the normal routine for medical emergency calls. Offering routine measures aim to reassure callers. In medical emergency calls, call-takers reassure callers that they are supportive to callers and are willing to listen if they need to express emotions and concerns about ongoing emergencies. When call-takers promise that a measure will be carried out in the near future exampled in "det fixar vi" ("We'll fix that") and "snart löst" ("soon be solved") they may provide time details about how long time it takes before it is over or when the ambulance crew is coming to the patient.

Problem solving by engaging callers in the emergency response operation

In order to solve problems when managing emergencies and crises call-takers give callers self-motivating messages to enhance caller engagement. Giving emergency care instructions is an educational calming practice to involve, support and calm callers with immediate tasks to do and/or prepare callers with pro-active action plans to perform in the near future if the situation would require that.

Extract 6:10 is taken from a medical emergency call about a man with a diagnosed kidney disease. The physician engages the caller by providing him with

measure oriented instructions about future, hypothetical conditions which are confirmed and negotiated by the caller. The background to the call is that a patient who suffers from kidney disease has collapsed in the bathroom of his home. The son calls the emergency number and talks to a nurse. Later in the call, the emergency control centre physician continues the medical interview with the caller. In the physician evaluation of the patient the doctor makes acuity judgements and determines what aspects the caller needs to think about in the emergency situation which is transferred in the measure oriented instructions to the caller. In the course of the call, the wife of the patient is situated next to her husband in the bathroom on a distance from the son who is calling the emergency number.

Extract 6:10 [Kidney disease] (1A17:111)

91D→En ambulans å en akutbil
An ambulance and an emergency vehicle

92 är på väg å de är snart
is on the way and they are soon

93 framme eh då är det bara att se till
there eh then it is just to make sure

94 att andningsvägarna är så fria
that the airways are as open

95 som de kan å samtidigt framstupa läge.
as they can and at the same time recovery position.

96 C Vänta lite jag ska titta bara.
Wait a moment I will just have a look.

This agenda-setting exchange guides the caller what to think about and to follow the treatment instruction by the physician by leaving the phone in order to initiate the treatment procedure in two steps ensuring that the airways of the patient are open and that the patient is placed in a recovery position. The physician prepares the caller to save the life of his father by adopting a joint treatment-orientation with the physician.

In light of this point, it is noteworthy to state that treatment options for patients increase if callers stay calm and become involved and take on a treatment-giver identity and responsibility in the emergency response process while they wait for the ambulance crew to arrive. In this case above, the preparation for the acceleration of the treatment initiation from pre-hospital to family handling of the emergency situation occurs because of the emergency context. The caller has in the kidney patient emergency been informed that the ambulance and the emergency vehicle

teams are on their way to the patient but the patient may die in the interim. In the process the caller states that he has knowledge of mouth-to-mouth resuscitation and thus displays his treatment-giver identity to the physician. The physician thus reassures and encourages the caller to take on this treatment-giver responsibility and use his first aid competence if needed. The caller is consequently chosen by the physician to perform the medical treatment on the patient. Preparing the caller to act on his treatment-giver identity is made through precise measure oriented instructions by the physician reassuring the caller with an ambulance assistance promise and a proactive plan in case the patient stops breathing.

The caller in the kidney patient emergency is oriented to the fact that the emergency vehicles are on their way which is reassuring information for the caller. The physician expects the caller to perform life-saving treatment on the patient by giving him technically based instructions demonstrated in Extract 6:11. The physician thus involves the caller in the emergency response process. The fact that the ambulance is on its way to the patient creates predictability for the caller. The physician reassures the caller with a positive orientation when giving emergency care instructions to the caller that this activity is something simple to carry out expressed in the "just" word in line 109. By using the lexical item "just" points out to the caller that this is a normal and easy procedure in this emergency call context.

Extract 6:11 [Kidney disease] (1A17:111)

109D→.hhja okej men då är det bara att
.hhja okay but then it is just to

110 se till att andningsvägarna är
make sure that the airways are

111 fria så att han får luft hela
free so that he gets air the whole

112 tiden å hjälp är på väg
time and help is on the way

113 å är det så att han får
and in the case that he

114→ andningsuppehåll nu så får vi se till
stops breathing now then we make sure

115 att han får gjort hjärtlungräddning
that he gets done cardiopulmonary resuscitation

116 å konstgjord[andning?
and mouth to[mouth resuscitation?

117 C [Nä det har ja har inte
[No I have I haven't

118 gjort det.
done that.

119 D Det har du inte gjort det nä.
You haven't done that no.

120 C Ja har gjort konstandn- konstgjord
I have done mouth breathing – mouth

121 andning på dockorna.
to mouth resuscitation on the dolls.

122 D Du har blåst luft i alla fall.
You have blown air at least.

123 C Ja.
Yes.

124D→Då är det första hjälpen om han
Then it is first aid if he

125 skulle få andningsuppehåll.
would stop breathing.

The physician engages the caller in the emergency response operation with reassurances and treatment preparedness instructions by taking on the doctoring role and educating the caller in a manageable emergency task operation, marking the ordinariness of the procedure through the lexical choice of "just" ("bara") and stressing the priority of the breathing with a recommendation. The physician continues the instruction delivery with a recommendation about (109-116) promoting the lifesaving competence of the caller. By giving an instruction the physician explains the near future treatment plan and technique in order to prevent failure in keeping the airway open which may result in total breathing obstruction or partial breathing obstruction. The physician reformulates the idea of the importance of having open airways which was described by the physician in the previous extract. The caller informs the physician that he is lacking experience in performing cardiopulmonary resuscitation (117-118) which is verified by the physician in a negated format (119). Instead the caller declares his identity, commitment and competence as a mouth-to-mouth resuscitation-giver (120-121) which is verified by the physician as a shared knowledge displaying that he has understood the reference frame of the caller (122) and then affirmed by the caller

(123). After the acknowledgement by the caller the physician continues to instruct the caller to carry out basic first aid (124-125).

The practice of engaging and giving callers emergency response instructions create predictability for callers. It is also a prevention method to reduce or remove possible anxiety in callers, and a preparation plan for eventualities in the near future. Callers will consequently have first aid plans to perform if the discussed eventualities occur. In the kidney patient emergency presented in Extract 6:11, the physician and the caller follow a detailed procedure outline for the patient breathing and recovery position orientation. In order to enhance the success of the first aid through a reassuring caller education and practical preparation procedure, the physician motivates, rehearses and reviews the first aid skills of the caller to set the stage for potential first aid efforts to be carried out by the caller. The participants thus create the first aid plan on a step-by-step basis and the excerpts show that this plan is changing based on the knowledge of the caller. In this example the first aid plan initially includes both cardiopulmonary resuscitation and mouth-to-mouth resuscitation. After the exchange between the physician and the caller about the first aid knowledge of the caller the pre-emergency arrival plan is reduced to only include mouth-to-mouth resuscitation. The physician demonstrates flexibility through recipient design turns in relation to the knowledge of the caller in order to ensure that the patient will receive first aid by making the caller feel calm, positive and confident to carry out the advised first aid operations.

"If X happens then do Y" instructions refers to acute conditions that are not in the reality of the caller at the moment but may become a reality in the near hypothetical future when changes in acuity occur. This type of emotion management practice is given in high risk situations in medical emergency calls. The format of this measure oriented instruction is "if X happens then do Y". An aspect of the problem solving emotion management is that it marks hope for a positive development of emergency events. The last emotion management method in medical emergency calls to be mentioned is underlining the positive and working to create hope for callers.

Managing emotions by emphasising the positive to create hope for callers

Call-takers habitually emphasise the positive to construct a calm call atmosphere in medical emergency calls exampled in "nu är det liv i honom i alla fall" ("now it's life in him anyway"). This emotion management practice expresses optimism for callers. Positive messages are usually positioned in the end of medical emergency calls. In Excerpt 6:12, the physician points to the two positive tendencies of a fast response time (185) and an improved condition of the patient (187).

Excerpt 6:12 [Kidney problem] (1A17:111)

185D→Den borde ju vara framme inom någon minut här.
It should be there in a minute here.

186 C Ja ja.
Yes yes.

187D→Men nu är nu är det liv i honom i alla fall.
But now is now is it life in him anyway.

188 C Ja ja.
Yes yes.

Another example of when call-takers give positive messages about emergencies is presented in Excerpt 6:13.

Excerpt 6:13 [Kidney problem] (1A17:111)

167 C Han pratar.
He talks.

168 D Han pratar.
He talks.

169 (120 second pause)

170D→Då så då håller det på att lugna ner sig men
Well then it is about to calm down but

171 hjälpen är på väg i alla fall han blir
the help is on its way anyway he will be

172 omhändertagen.
taken care of.

173 (1.5)

174 C Ja det hörs ända hit att han mår bra.
Yes it is hearable all the way here that he is doing well.

In this fragment the caller informs the physician about an improved patient status (167). As a response the physician with an expert status identity states positive aspects about the patient's condition and promises ambulance assistance. With these two emotion management techniques the physician reaches a consensus contact with the caller demonstrated in the confirmation by the caller at line 174. To be

positive as a call-taker may both have calming and cooling effects on callers in medical emergency calls. Feelings of happiness are rarely expressed in medical emergency calls. When happiness is conveyed in medical calls for help, callers' orientations are usually focused on what they have gained such as a family member feeling better as in the call above about the kidney patient.

Discussion

Emotion management in medical emergency calls is a professional social sensitivity and specialised telephone call support activity initiated and carried out by call-takers when interacting with callers. An overall strategy of call-takers in medical emergency calls includes performing a number of emotion management practices simultaneously. The analysis reveals four main types of managing emotions in medical emergency calls: (1) call-takers maintaining a calm state and managing emotions of callers; (2) granting ambulance assistance; (3) problem solving presentations of emergency response measures to problems of callers, and (4) emphasising the positive to create hope for callers. These types of emotion management practices are here summarised and compared.

In the analysis, I have discussed call positions of emotion management practices. The emotion management practices of maintaining a calm state and managing emotions of callers are performed by call-takers throughout the calls. Ambulance promises are routinely positioned in the end of medical emergency calls. Problem solving is placed in the questioning phase and in the end of the calls. Engaging callers through future, hypothetical measure oriented problem solving is habitually located in the end of the calls as a method to prepare callers to encounter and respond to possible upcoming, acute situations. Positive messages are usually positioned in the end of the calls and also occasionally in the questioning phase. Most of the emotion management practices are thus placed in the end or in the questioning phase of emergency calls. With these emotion management practices call-takers stay calm, reassure callers with positive messages, solve problems and make decisions about how needs and concerns of patients and callers should be met regarding emergency response efforts.

When analysing emotion management practices in medical emergency calls, I have examined what comes before the initiation of emotion management. The findings demonstrate that call-takers manage callers' emotions as direct responses to social displays of emotions by callers, for instance, when call-takers promise an ambulance instead of responding with frustration in the call in which the caller delivers a frustrated protest to the suggested choice of hospital destination by the call-taker. More specific places that cause emotion management interaction in medical emergency calls are characterised by situations when callers express

anxiety and insecurity with their words and voices of what they should do next, when callers state that they lack abilities to handle emergency events or explicitly articulate that they need support.

Emotion management procedures in medical emergency calls are asymmetric in character. Call-takers have knowledge about emergency response routines and when ambulances are sent. Assymetries between call participants are exhibited by, for instance, in that call-takers have a decision and interpretative prerogative in medical emergency calls and perform emotion management practices based on emergency response organisational expertise, norms and guidelines. However, call-takers orient to understanding emergency situations, expectations and needs of callers with the consequence that calming interaction sequences may end in consensus between call-takers and callers. When comparing the emotion management methods the findings demonstrate differencies in levels of interactional asymmetry of participation between call-takers and callers. Asymmetries of tasks include that call-takers calm callers to engage them in assisting patients. Knowledge-based asymmetries are expressed in dissimilar epistemic domains between call-takers and callers in that professional call-takers have expertise in emotion and emergency management.

By engaging callers in the emergency response work call-takers ask callers to carry out first aid measures on patients or prepare for the arrival of ambulance services when both call-takers and callers share the strong commitment to save lives of patients. Asymmetries between call-takers and callers are minimised when they cooperate to assist patients in a shared emergency response operation.

Call-takers usually respond sensitively to callers' emotions through specific and recipient designed emotion management. By orienting to see emergency events from the eyes of callers call-takers use their emergency response expertise when performing emotion management in medical emergency calls. Call-takers are routinely able to stay calm and collected and organise their conduct so that the calls are moving towards to overall goals of the medical emergency call of making an informed ambulance assistance decision and preparing for the arrival of the ambulance services. These overall goals are not emotionally steered but driven by the emergency control centre and the societal mandate of the emergency control centre to respond to medical emergencies in cooperation with ambulance services.

When callers become worried and agitated it will usually make the call environment worse. As a response call-takers maintain their professional emotional neutrality, stay calm and reassure callers that they have emergency response operations under control. Emotion management through calming practices will usually lead to a decrease in callers' anxiety. Anxious callers will generally benefit from extra emphasis on supportive calming statements by call-takers.

Emotion management techniques are used by call-takers to meet the requirements and functions of medical emergency calls and the emergency control centre. The results suggest that emotion management methods used by call-takers

keep callers as information sources and active participants in managing emergencies. Call-takers' emotion management practices are supported by the institutional mandate with operational implications of what call-takers are required to do according to the protocols of the emergency control centre.

Another dimension of emotion management practices is to perform tangible strategic route planning in regards to the emergency response. Creating an emergency strategic route in medical emergency calls is a social structure that has been built by the emergency control centre and call-takers in order to calm and help callers to overview emergency situations. By giving strategic route messages call-takers can support callers to calm down, handle stress, worry and other strains.

Call-takers use the medical index to calm and direct callers to adhere to the social normative order of medical emergency calls in case they challenge it or do any other actions that may risk the expected acute flow of the emergency call order. A related practice in medical emergency calls on the topic of calming is what I term acute flow maintaining instructions (which will be discussed in chapter 8 on instruction giving) exampled in, for instance, "if you calm down a little bit now" which is a caller compliance procedure in which call-takers make total strangers comply with the social normative order of medical emergency calls by requiring the assistance of callers. Callers are expected to calm down and help emergency response authorities and therefore submit to call-takers who have expertise over emergency response procedures. Callers have limited emergency response options. Relinquishing their free will and going with the emergency call order is part of the emergency response process for callers. When call-takers direct callers to calm down and perform emergency measures on acutely ill patients callers routinely comply with the procedure.

Emotion management practices are intrinsic of medical emergency calls that usually do not build on previous relationships between call-takes and callers. Medical emergency calls are about short-term contacts between persons that do not know each other compared to long-term relationships between, for instance, a dentist and a patient. Callers in ambulance emergencies may be patients and immediate and extended family members, close friends, acquaintances and non-relatives of patients. Caller needs for expert reassurances emerge in complex crisis situations in which callers have certain or lack knowledge and skills of what to do when responding to emergency events and acute symptoms of persons. They can after receiving reassurances and instructions from call-takers begin to perform laymen first aid measures on patients until the ambulance services arrive and take over the treatment measures.

In the majority of the emotion management interaction in medical emergency calls, call-takers make callers available to information and instructions by calm words of reassurance that everything is going to be all right and a gentle tone of voice. These calming practices in medical emergency calls are based on emergency management knowledge, experience, expertise, skills and judgement of call-takers,

and on institutional requirements, guidelines and routines of the emergency control centre.

Emotion management practices in medical emergency calls are carried out in the computer-mediated setting of the emergency control centre in order to dispatch or decide not to grant ambulance assistance to the locations of the reported problems. Call-takers identify care needs based in acute conditions of patients, time frames and limited resources of the emergency control centre. Call-takers use and orient to institutional contexts such as laws, regulations and guidelines with restrictions for the emergency response operation limiting them what they can say and do when managing callers' emotions. When comparing medical emergency calls with institutional and non-instutional callers some observations can be made. A practical tone and no or minimal calming practices characterise inter-institutional emergency calls, for example, between call-takers and nurses in hospitals and elderly homes. In contrast, call-takers routinely talk gentle with non-institutional callers.

7 Managing risk in medical emergency calls

Introduction to managing risk in medical emergency calls

This chapter examines interactive practices and organisational contexts of risk management in medical emergency calls between call-takers and callers. Risk is a universal phenomenon in human interaction. People are continuously facing new risks in everyday life. General life risks are therefore a normal aspect of human existence. Risks arise from uncertainty, occur unexpectedly, concern future courses of action and may have long-lasting consequences.

In this chapter, I aim to formulate an ethnographically contextualised conversation analytic understanding of risk management interactions and institutional contexts of medical emergency calls. The ethnographic contextualisation explains the professional task of managing risk in medical emergency calls from the standpoint of call-takers and the emergency control centre. Features of this contextualisation include interpretations about risk management, the medical index technology and procedures of the emergency control centre, risk settings, risk groups, networks of professional relationships, mandates and responsibilities of the emergency response professionals and the emergency control centre, organisational agendas, tasks, norms and guidelines, as well as legal and financial dimensions. I will also discuss major approaches of social theory on risk including how processes and structures of late modernity create what Beck (1992) calls "risk society", and present how medical discourse analytic and conversation analytic researchers examine risk.

The ethnography of risk management in medical emergency calls

Here I will advance the conversation analytic approach to risk interaction by presenting an ethnography of how risk management is materialised in medical emergency calls. Risk management in medical emergency calls consists of micro systems and processes of the emergency control centre environment that support risk identification, assessment and decision-making undertaken by call-takers and callers to handle current or possible risk[44].

Risk management pervades medical emergency calls. Callers dial the emergency number to handle what they experience outside the telephone call as such. To understand interactive practices and organisational contexts in which risk management procedures are carried out in varying medical emergencies, I look at how emergency call-takers and callers handle risks in telephone interaction within the contexts of local emergency site conditions and broader organisational arrangements in time and space.

Conceptualising risk management in medical emergency calls

I here define risk as a time- and space-bound situation of uncertainty characterised by the seriousness and probability of negative outcome. A risk may be affected by actions or if the situation in which a risk has arisen change or by humans reducing the implication of the risk. The relevance of time in risk management in medical emergeny calls is related to life and death. A time-related risk in this type of institutional interaction is delayed ambulances when patients may die while waiting for the ambulance crew. Risk management in medical emergency calls are professional interactive practices carried out by emergency call-takers and callers, and organisational procedures of the emergency control centre. The analysis will show two major risk types:

1. Risk that has already materialised such as a stroke
2. Risk of progression such as the risk of dying or not receiving treatment and/or medication

[44] Based on an interview response by an emergency control centre professional on 24 October 2014.

When comparing risk practices and contexts in past medical discourse analytical studies (as has been shown in chapter 2) to risk procedures and circumstances demonstrated in the medical emergency call interaction data of this thesis some observations can be made. A similar pattern in all of these risk contexts is that they concern communication about future risk. A difference from past medical discourse analytic studies on risk is that this study analyses risk management practices and organisational contexts in medical emergency calls from a combined ethnographic and conversation analytic approach. I view risk management in medical emergency calls not only as an interactive practice but also an emergency call-taker and an organisational process.

Managing risk in medical emergency calls does not concern abstract organisational schemes. I demonstrate how the risk management practice in medical emergency calls is produced by the emergency organisation, and professional call-takers and callers in telephone interaction. These organisational and interactive patterns form a unity which creates the activity of risk management activities in medical emergency calls. This perspective is not linguistically oriented as many of the past discourse analytical studies on risk, macro-focused on risk as in the risk studies by Beck and Giddens (as has been shown in chapter 2) or biomedically directed on individualised risk but rather interactive activity attentive to risk management in medical emergency calls.

Past medical discourse analytic research on risk has focused on situations where the expert informs the client about risk in mainly face-to-face interaction contexts with an active expert and a passive patient regarding mainly long-term risk. Medical emergency calls presented in this thesis differ from these in that they are emergency call-taker led interactive practices with routinely active callers that manage risks together with call-takers. When call-takers and callers have discovered actual and potential risks callers are regularly urged to take action based. Caller (patient, relative or bystander) involvement when managing risk in medical emergency calls is thus a repeated procedure in this interactive activity.

When managing risk in medical emergency calls, call-takers perform health and safety oriented risk management practices based on their past emergency response knowledge, cognitive problem solving skills, risk management routines and expert systems. The technology knowledge in expert systems can be referred to as encoded knowledge (cf. Lam 2000) as it is listed and codified in the medical index on the computer screens of call-takers used to systematically handle risk. Call-takers have also acquired risk management knowledge based on past risk experiences in medical emergency calls, and cognitive abilities to solve problems related to acute risk incidents.

The emergency control centre restricts who can call the emergency number, how technology can affect the emergency response process and what solutions call-takers are given via the medical index and organisational checklists and policies to manage risk in medical emergencies. The call participants have at the same time

free will to handle risk in individualised ways. Call-takers orient to the computerized decision support and expert system of the medical index that may aid the making of a particular decision, other institutional guidelines and communication systems, organisational demands and procedures for ensuring accountability. The structure of the emergency control centre may thus shape interactive patterns in the risk management practices.

The emergency control centre has a restricted area of societal responsibility being a risk management organisation that handles risks in medical emergencies. From an organisational perspective call-takers only accept described problems that are acute. Call-takers are cognitively oriented to classifying potential dangers by using organisational support in standard procedures, knowledge structures, type-specific risk categorization and schemes of the medical index about different types of medical emergencies that orders risk details in a way that enables interpretation and leads to risk response action that is built on past medical emergency response experience. Call-takers also cooperate with professionals in other organisations when responding to risk in medical emergencies. The societal responsibility of handling risk in medical emergencies is later in the emergency response process shared or handed over in inter-institutional collaboration to ambulance services and sometimes also to the police.

Risk in medical emergency calls often concern six main types of risk contents. The first one is person safety risk. Subtypes of identifying person safety risks concern a protected or unprotected person. A distinction can be made between immediate life-threatening and potentially life-threatening safety risk of patients in medical emergencies. The second is emergency response risk related to the emergency response operations. The third is serious care injury risk related to the pre-hospital emergency care response. A distinction may be made between a care injury and a risk of care injury. The fourth is technical problems in the emergency response system RAKEL causing delays in ambulance responses or errors in the positioning of ambulances. The fifth is building access risk of not being able to get into buildings and homes of patients. The sixth is error prioritization risk when ambulance transports receive a low prioritization causing a slower response with possible health status deterioration risks for patients. These types can be grouped into local event or emergency organisational levels of medical emergency calls. Emergency call-takers identify risk at the local event level which includes person safety risk, serious care injury risk, building access risk or on the emergency organisational level comprising technique problems in the emergency response system and error prioritization risk.

Risk management practices in medical emergency calls as systematic products of the emergency control centre

Risk management practices in medical emergency calls may be viewed as systematic products and functions of the emergency control centre. Risk is central to the internal structuring of this institution in its mandate to identify and manage acute risks in medical emergencies to individuals and wider society. With this formal societal risk responsibility the emergency control centre has created risk steering and risk monitoring procedures and principles including recording medical emergency calls, and standardised risk management task technology and check lists.

The emergency control centre possesses a risk classification system in the medical index providing a structured system to assess and manage a limited number of risks, and power and legitimacy to care for and make decisions about acutely ill and injured persons that need to be transported to the hospital emergency department for further medical care. Emergency call-takers are expected to identify, position, move patients to secure locations, protect, care for, calm, assess, make decisions about and transport patients using risk management expertise, professional distance and authority in cooperation with callers and ambulance services.

Features of the risk management practice in medical emergency calls

I will investigate how the organisation shapes risk management in medical emergeny calls. The features of the risk management practice in medical emergency calls I discuss in this section have emerged in the interviews with call-takers. Risks or situations of uncertainty are a central part of the organisational and interactive contexts of medical emergency calls. The emergency control centre deals systematically with identifying, assessing and reducing risks. Components of risk management in medical emergency calls reflect both the organisation and the interaction. I will here outline the characterising patterns in managing risks in the practice of medical emergency calls. From a conversational and environmental perspective four levels may be observed in the practice of risk management in medical emergency calls: (1) the emergency call itself; (2) the cognitive level and knowledge base of emergency call-takers; (3) technical level as technical schemes in the medical index on the computer screens and other emergency response equipment and IT-based channels of communication and (4) the formal emergency control centre organisation as a whole.

Detecting acceptable and unacceptable risks in this type of institutional interaction concerns issues at the operational level of medical emergency call activities. The acute nature of medical emergency calls with high likelihood of risk makes it riskier than other risk discourse contexts presented earlier in this chapter and the routinely greater degree of risks place the practice of risk management higher on the emergency call-taker agenda. Managing potential risks, hazards and threats in medical emergency calls includes a multidimensional range of problems, challenges and rules of thumb about risks through the eyes and ears of callers and emergency call-takers.

The basic trajectory of risk management construction in Swedish medical emergency call management is getting risk management practices achieved in four steps: (1) Initiation of risk management through an account by the caller mainly in the beginning of the medical emergency call; (2) Risk identification by the call handler; (3) Offer of risk reduction instruction or information by the call handler, and (4) Sequential uptake to the risk reduction instruction or information by the caller through an acceptance or rejection. This risk management structure may be interpreted as a shared emergency problem solving activity carried out by cooperating call-takers and involved callers (relatives, patients and witnesses) in medical calls for help.

An alternative risk management interaction order is displayed when emergency call-takers interact with other emergency response professionals of the ambulance services and police: (1) Initiation of risk management by a description by call-takers to the ambulance service; (2) Hazard and risk verification by the ambulance or police professional; and (3) Post-emergency report from the ambulance service to the emergency medical dispatcher. The routine in medical emergencies with fighting persons that are injured and suicide attempt persons are for the ambulance crew to contact the police to request risk management assistance. Call-takers in the emergency control centre assist the ambulance service in contacting the police.

Risk management interaction in medical emergency call calls demonstrates differences in levels of interactional asymmetry of participation between call-takers and callers, and emergency call-takers and ambulance and police professionals. Risk management in medical emergency calls is a critical expertise of emergency call-takers, ambulance and police professionals, and they routinely display their knowledgeability of and control over risk management. Risk management procedures of emergency call-takers are supported by the institutional mandate with operational implications of what call-takers are required to do according to the protocols of the emergency organisation. On the other hand, callers have direct knowledge about emergency events, past medical histories and symptoms of patients and can thus perform measures on the sites of emergencies before the arrival of ambulance services. However, callers do usually not have mandated risk management competencies unless the caller is a physician, poison control professional or similarly. These dimensions have implications for the levels of

asymmetry between call-takers and callers in the diverse types of risk management procedures in medical emergency calls. Asymmetries of tasks include questioning and risk identification procedures of call-takers in order to aid patients and callers and measure performances by callers. Knowledge-based asymmetries are expressed in dissimilar epistemic domains between call-takers and callers in regards to risk management.

Risk management in medical emergency calls is both consensus and double asymmetric in character since the epistemic asymmetry of callers having direct access to patients, knowledge about and epistemic authority of the conditions of patients. Call-takers more or less acknowledge the epistemic authority of callers regarding emergency events and patient conditions. In risk management call-takers need callers to provide details about emergency events and current symptoms of patients and carry out measures on patients which means that mutual cooperation is central in this type of risk management. Asymmetries between call-takers and callers are minimised when they cooperate to assist patients. Finally, the interactional asymmetry between the call-taker and the caller will be further discussed in chapter 8 on instruction giving.

Features of the risk management process in medical emergency calls include: (1) call-takers' emergency risk and action preparedness which has been created by the organisation in order to anticipate risks and be ready to act; (2) acute medical and mental health emergency risk, and emergency response risk; (3) the immediate action character of risk management in medical emergency calls; (4) acute telephone communication; (5) the problem presentation based risk management practice; (6) life at risk and death-related issues here and now which is usually not the case in the other presented risk settings; (7) a shared professional call-takerand citizen caller task-centred risk management and involvement and (8) future and proactive risk management.

The organisationally defined state of emergency risk and action preparedness

In this pre-impact point of events call-takers with risk expertise are in a state of readiness of identifying and attending to "risk factors" with practical considerations to think ahead about where the dangers lie regarding patients, incidents and circumstances and respond to possible upcoming risk outcomes to prevent harm, injury or a crisis. Examples of emergency risk and action preparedness activities in medical calls for help are early warnings, identifications of possible scenarios, hazards and consequences, risk factor mapping and monitoring readiness, injury and damage assessment, risk contingency planning, site selection, for instance, landing air ambulance helicopters, and acute decision preparedness and emergency risk planning designed to save lives and to prevent and minimise injury and loss in

emergency situations. Emergency risk and action preparedness involves putting safeguarding planning into risk control actions. The medical index on the computers of call-takers is designed to provide early-warning indicators in known risk scenarios and typical schemes, for instance, about heart attack in acute medical emergencies. However, this technology is restricted in regards to recognizing unknown risks.

Acute medical and mental health emergency risks

A pattern in risk management in medical calls for help is that this activity concerns acute medical and mental health emergency risk with critically ill and injured persons which may be life-threatening. The "high" risks in medical emergency calls can be compared to non-acute medical and mental health risks or everyday risks. A medical emergency is an injury or illness that is acute and is a direct risk to a human's life or long term health. Risk management in medical emergencies is dependent on numerous facets, for instance, current symptoms and medical conditions of acute medical patients and the character of each unique emergency situation[45]. Psychological or mental health risk factors in medical emergency calls include, for instance, persons suffering from depressive illness with mental distress facing serious risk to do self-harm or commit suicide.

Emergency call-takers are provided with formalized risk control methods in the medical index which is designed with a safety margin framework in order to be as patient safe as possible. It is therefore an organisational risk management practice. The standardised risk management of acutely ill and injured persons in calls for help is based in the medical index which is created in relation to standard risks and routine medical conditions and symptoms that persons suffer from emergency situations. Other relevant issues in the risk management practice are the past medical history, age, and physical and psychological circumstances of the patient. These details are collected by call-takers in the medical interview with callers. Non-medical risk factors in non-acute risk contexts include risk behaviours and increased stress based on, for instance, experienced threats, divorce, adultery or economy problems.

[45] Interview response by an emergency control centre professional on 24 October 2014.

Immediate action character of risk management in medical emergency calls

Medical emergency calls are about managing direct risks in contrast to long-range risks. The emergency response organisation is created to receive certain types of acute problems and communicates to the public that these are problems that call-takers handle. The acute medical emergency context requires emergency call-takers to swiftly identify risk and also decide if different issues pose risk or not. A medical emergency call is a call-taker driven activity routinely requiring urgent intervention in high risk activities. Identifying risks in calls for help are consequently about straightforward and rapid engagement by emergency call-takers and callers here and now. Risk management in medical emergency calls is also about sharing risks with callers and active caller participation which makes this context different to other risk contexts presented earlier in chapter 2 where lay persons are routinely passive in the interaction with experts. Emergency call-takers routinely empower and encourage callers with instructions and knowledge to identify and manage risk. When participants in calls for help have discovered potential risks callers are regularly urged to take action to prevent injuries, fatalities and risk of damage and minimize risk consequences.

Acute telephone communication in medical emergency calls

Risk management in medical emergency calls is achieved through acute telephone communication. A restriction for emergency call-takers when talking about medical and mental health emergencies on the phone is that they only communicate verbally with callers. The emergency call-taker is not present at the incident site, and must put herself or himself in an emergency scene sensitive position to identify risks in the local contexts of medical emergency calls in contrast to face-to-face interactions. The call-taker does not have access to non-verbal cues that become obvious the moment the patient enters the consulting room of a nurse or physician.

The problem presentation based risk management practice in medical emergency calls

Risk management in medical emergency calls is routinely initiated at the point when the caller describes a problem in the beginnings of the call for help. The problem description about who, what, where and when details in the call beginning or later in the call may exhibit significant acute risk factors and risk profiles with vulnerabilities and endangerment for persons and environments. In the information

processing routine the call-taker is typing these possible risk details on the computer keyboard. Based on the problem presentation the call-taker distinguishes risk profiles and detects possible risks, specifies threats and recognizes actual risk consequences including deaths, injuries and property damage. By identifying known and anticipated risks, the call-taker takes a first step toward evading risks when possible and controlling risks when needed. In the risk response risk contingency plans may be implemented, immediate actions taken and risk communication initiated. In contrast to the call handler, risks are subjective for callers in medical emergency calls.

Life at risk and death-related issues here and now

A significant pattern in risk management in medical emergency calls is that they concern risks of being immediately and acutely injured, damaged or killed which is usually not the case in the other presented risk contexts in chapter 2. Risk management in medical emergency calls is about expressions of concerns about death. In the borderline between life and death when patients' heart and lung capacities are deteriorating patients are often fighting for their lives.

Task-centred risk management

Detecting hazards, recognition and interpretation of risk factors, assessing the degree to which risk factors could impact upon events, having contingency plans designed to avoid or minimize potential impacts, communicating risk to callers and emergency response professionals and reducing risk to protect people are dimensions of the emergency call-taker task of risk analysis. The risk management process in medical emergency calls consists of two broad tasks. One task is patient analysis by which emergency call-takers manage risk related to medical conditions of patients. The second task is managing risk in emergency environments. This latter task involves the determination of favourable and unfavourable scenarios.

Active callers

Risk management in medical emergency calls usually include active and involved callers because when call participants in medical emergency calls have discovered potential risk callers are regularly urged to take action based on instructions by call-takers to prevent injuries, fatalities and risk of damage and minimize severe consequences of events. Callers in risk management interactions in medical

emergency calls are divided into first person callers and third person callers. Third person callers are routinely more active than first person patient callers.

Future and proactive risk management

Risk concerns future events. Consequently, call-takers envision forthcoming occurrence of risk in emergency situations which concerns sudden, unexpected and unwanted events that have not happened but can happen. They then use their professional future and proactive risk experience and awareness concerning physical and psychological vulnerabilities and capacities of persons to discover risks and accurately take action in relation to possible risks in emergency events. They can also make criterion-based judgement about future risks in medical emergencies based on the medical index on the computer screen.

Vulnerable groups at high exposure to risk in medical emergency calls

Persons with suicide thoughts, mental health care needs, a depressive illness background, psychosis and a tendency for violence to injure other persons are included in the group of at-risk persons at high exposure to risk in medical and mental health emergency calls. Risk factors connected to persons with self-harming conduct include persons who indicate a high risk for violence with a self-harming or violence history, over consumption of drug or alcohol, chronic and physically painful conditions, depression, newly experienced loss or stress and plans to commit suicide.

Living and being located in remote places may also increase the levels of risk because the ambulance response time is longer than if the patient would be in the city closer to an ambulance station. Victims of domestic violence and persons in violent domestic and local commteamy arrangements are at greater risk of being injured or killed. Persons in acute medical emergencies experience varying levels of risk when more or less social support resources to respond to upcoming risks in the emergency situation are available. Other vulnerable and marginalised groups in society at higher risk are the elderly, children, persons with disabilities and persons with chronic health problems that experience frequent acute incidents especially if they lack social support. Risky locations in society are, for instance, train and underground stations.

The role of local geography for acute medical risk events

The risk environments in my empirical data are mainly an urban setting and its archipelago with different time and space implications in regards to ambulance services and other types of emergency response assistance. Local geography for acute medical and mental health risks may be relevant, for instance, in preventing suicide and mental illness emergencies. In the event persons threaten to commit suicide, risk levels varies in Sweden depending on the guidelines and local geography of where the incident occurs. Mental health services in Swedish municipalities and counties and police authorities assess and manage these incidents differently around the country where varying suicide reduction and prevention projects are undertaken. In those counties where they work with suicide preventive projects they have action and emergency plans that the emergency control centre follows. These county specific action and emergency plans are not identical but the degree of cooperation between organisations involved in suicide threat incidents may vary. In self-harm emergencies in counties that lack particular action and emergency plans follow the routine and policy of SOS Alarm about how these type of cases should be managed. Above has been shown a number of ways organisational circumstances shape risk management in medical calls. The remaining part of this chapter will focus on risk management practices in medical emergency calls.

Risk management practices in medical emergency calls

Placement of risk management practices in the overall phase structure of medical emergency calls

Risk management in medical emergency calls is achieved through the use of fundamental interactive practices in particular sequential environments. Table 4 presents the sequential placement of risk management procedures in the overall phase structure of medical emergency calls.

Table 4

Sequential placement of risk management practices in the overall phase structure of medical emergency calls

PRACTICE	*PLACEMENT IN OVERALL PHASE STRUCTURE*				
	Opening	**Request for help**	**Questioning**	**Response to request for help**	**Closing**
Risk listening	———	———	———	———	———
Risk questioning	———		———		
Risk identification	———	———	———		
Risk monitoring	———	———	———	———	———
Risk assessment	———	———	———		
Risk based decision-making	———	———	———	———	
Risk reduction	———	———	———	———	

Table 4 demonstrates with the horizontal lines that the interactive practices of risk listening and monitoring are performed throughout medical emergency calls. Risk identification and assessment procedures are undertaken up until the decision response to the request for help. Risk reduction and decision-making procedures are carried out until the closing of the call. Risk questioning is performed in the opening and during the questioning phase of medical emergency calls.

A medical emergency call involving injuries, accidents and diseases is in itself risk management carried out by emergency call-takers. The task based risk management process in medical emergency calls is achieved through the use of key interactive practices performed by call-takers on behalf of the emergency control centre. Here I analyse seven recurrent risk management practices in medical emergency calls:

1. Risk listening through active listening after actual and possible risk
2. Risk questioning including risk detail gathering
3. Risk identification
4. Risk monitoring
5. Risk assessment
6. Making decisions about elicited risk
7. Risk reduction which is about risk removal or risk reduction to satisfactory levels of risk.

These seven practices are central aspects of the managing risk interaction in medical emergency calls and reflect core competencies for call-takers.

Listening to risk

Risk listening which has not been analysed in past research on emergency calls. In the ethnographic interviews with emergency call-takers they described that risk listening is an important part of managing risk in medical emergency calls. A medical emergency problem causes a caller to dial the emergency number and present this problem to a call-taker. Risk listening is initiated by the call-taker who actively listens after risk that routinely is related to acute life danger or security. Risk listening is especially important in medical emergency calls because they concern telephone interaction and not face-to-face encounters. The amount of knowledge sources are reduced in medical emergency calls compared to when the ambulance service is with the patient. The emergency control centre encourages the call-taker to be consciously present and risk prepared that anything can happen in medical emergency situations.

Risk questioning

Another central risk management practice is risk questioning including risk detail gathering. Emergency call-takers carry out the risk identifying and risk monitoring questioning based on the medical index and past risk management experiences. By asking problem-based questions about current risks in the moment that are: (1) described by the caller, (2) discovered by the call-taker or (3) by identifying probable future risks the call-taker creates a risk overview, risk response action and risk prioritisation plan. In the medical emergency call questioning practice, the experienced emergency control centre practitioners tend to rely on their professional risk judgements to build the knowledge to understand what the risk factors are and how they co-relate. Risk questioning in medical emergency calls is time limited and the call-taker questions and sets priorities around areas that appear most critical including actual or potential threat to life.

Risk identification

Risk identification pervades the risk management practice. The risk identification practice documents actual and possible risks throughout the event development and emergency response delivery process. Risk identification is continuous and new risks should continually be invited into the process. Risk is identified in medical emergency calls through risk listening and risk questioning. Risk events or issues in medical emergency calls are identified in mainly three ways: (1) Callers describe risk-based medical problems that directly demonstrate risk; (2) Callers talk about other issues that implicate emergency related risks, for instance, describing a person

at the incident scene being situated next to a railway track and (3) emergency call-takers carry out risk identifying questioning that callers respond to. In the risk identification and risk detail search the call-taker identifies, collects and orders risk particulars in order to make risk management decisions later in the call.

Medical emergency call positions where risk identifications are placed include risk existing before initiating medical emergency calls and risk materialising in medical emergency calls. Risks arising in medical emergency calls which are divided into two main groups: (1) Risk identification placed after the problem description in the beginning of the medical emergency call; and (2) risk identification placed in the measure planning phase in the end of the medical emergency call. Distinctions in the group risk identifications placed with measure proposals in the end of medical emergency calls concern: (1) Immediate measures. These measures should be carried out fast and in close connection to the current event as possible. Examples are evacuations of persons from railway tracks in order for persons not being hit by trains or evacuating persons from a beach where an ambulance helicopter is about to land in order to avoid injury. (2) Short-term measures. These measures are usually easier to perform and the performance can be achieved in a quick way. An example is to have someone open the gate to a building in order for the ambulance crew to enter the building to reach a patient. (3) Long-term measures. These measures may be more complex. An example is to transport an abused person to a hospital to protect her or him from further domestic-violence.

In the risk identification process emergency call-takers seek, identify and categorize risks that could affect incidents. The activity of identifying risk is based on probability and the level of impact of particular risk. An aspect of identifying risk sources is risk access. Risk sources in acute emergency situations can be known or unknown and more or less accessible. The call-taker both shares and hides certain risk particularities in interaction with callers. With the gathered risk material from risk listening, risk questioning, risk identification and risk assessment the call-taker creates a risk overview of the current emergency situation.

Consider the following emergency event when a person is situated next to a railway track. In Extract 7:1, the nurse identifies an accident risk in the likelihood of the patient being run over by a train and at the same time provides a risk reduction instruction through an injury prevention and control recommendation question about moving the patient away from the danger zone (5) which is confirmed by the third person caller (6). The nurse thus displays the professional risk management identity which is affirmed by the caller.

Extract 7:1 [Bleeding and breathing difficulty on the train track] (1A)

4 C Det är en kille som har tror ja han har ramlat ner på spåret å blöder.
It is a guy that has I think he has fallen down on the track and is bleeding.

5N→Mm har ni fått upp honom från spåret?
Mm were you able to get him up from the track?

6 C Ja.
Yes.

Extract 7:2 is taken from a call when another caller talks about a man lying next to the railway track. The nurse identifies accident risks and performs an extended line of questioning sequence about the location of the patient. At line 6 the nurse identifies the accident risk that the patient may be run over by a train. The third person caller responds to this by providing the position of the patient and describing the medical condition of the patient (7-8). At lines 11-12 the nurse re-identifies the accident risk that the patient may be run over by a train. The call-taker consequently demonstrates a risk awareness of that people in past emergencies have been run over by trains. The call-taker wants to make certain that the patient does not die or that the injury of the patient is not becoming worse. It is through the accident risk identifying questioning the call-taker makes visible the potential problem. As a response, the caller informs the call-taker that the patient is not situated on the train track (13).

Extract 7:2 [Fallen patient on the train track] (49)

2 C Ja hejsan vi ringer från [l[oc]ation].
Yes hello we're calling from [location].

3 O Mm [mm].

4 C Eh det är en kille som har ramlat ner
Eh it is a guy that has fallen down

5 från järnvägen från vägen på järnvägspåret.
from the railway from the road to the railway track.

6 O Ligger han på spåret eller?
Is he lying on the track or?

7 C Han ligger precis jämte spåret han
He lies right alongside the track he

8 verkar vara medvetslös.
seems to be unconscious.

9 O Telefonnummer du ringer från?
Phone number you're calling from?

10 C Det är [phone number].
It's [phone number].

11 O Mm .hh eh va du han ligger alltså jämns
Mm .hh eh what you he lies then alongside

12 med spåret inte på spåret nu?
the track not on the track now?

13 C Han ligger inte på spåret.
He does not lie on the track.

14O→Ni ni kan flytta honom alltså så att han inte
You you can move him then so that he'll not

15 blir skadade av något eventuellt tåg.
become injured of some possible train.

16 C Det blir han inte.
He won't.

17 O Nä nä var där nånstans då på alltså
No no where there then on then

18 [location] då?
[location] then?

19 C [Location].

In Excerpt 7:2, the caller describes a problem that conveys an accident risk in that a man has fallen on a train track (4-5). In response, the emergency call operator exhibits risk awareness of a particularly significant danger by inquiring about the location of the patient (6). The emergency call operator produces a clarifying question that presupposes an identifiable exposure to an accident risk, and seeks to locate a specific risk situation. In his response the caller specifies the location of the patient and describes the possible unconsciousness condition of the patient (7-8). After a standard exchange about the phone number of the caller (9-10) the emergency call operator verifies the risk detail that the patient is situated alongside the train track and therefore suggests the possibility that the patient would be on the train track with a clarifying question (11-12). In response, the caller asserts that the patient is not placed on the track (13). At this point of the call it is still undefined for the emergency call operator if a train may hit the patient. Consequently, the emergency call operator provides a risk reduction instruction to handle the accident

risk instructing the caller to move the patient to a secure location in order for him not being hit by a train using an explicit recommendation (14-15). The caller responds with a reassurance that the patient will not get injured by a train (16) projecting and implying that the patient is not facing a particular accident risk caused by his location. In this way, he also demonstrates his knowledge of risk management strategies. After displaying an understanding of that the patient is safe the emergency call operator initiates an exchange about the location of the patient (18-19). Note that the emergency call operator in the above fragment focuses on the positioning of the patient which is directly related to the accident risk degree. The emergency call operator thus develops an accident risk-focused line of inquiry throughout the segment, while the caller persistently presents himself as a person who is in control of accident risk prevention. Both participants exhibit accident risk knowledgeability and control in this fragment.

Extract 7:3 is about identifying accident risks when an air ambulance helicopter is about to land on a beach with bystanders. The fragment displays how the emergency call operator identifies risk (94) in a call about an unconscious drowning person. Here the emergency call operator plans the landing of an air ambulance helicopter and gives an example of a place “a field" (78) where the helicopter can land.

Extract 7:3 [Drowning] (19A)

77 O Om de- om man kommer med helikopter då hur- var kan
If they- when arriving with helicopter then how- where can

78 man landa där? Vet du nåt gärde i närheten?
one land there? Do you know about a field nearby?

79 Är de nära vattnet alltså?
Is it close to the water then?

80 C Ja.
Yes.

81 O Är det precis vid viken?
Is it right on the bay?

82 C Ja kan de landa på vattnet?
Yes can they land on the water?

83 O Nej det kan de inte.
No they can’t.

84 C Nä då kan de landa borta vid herrgårn
No they can then land away at the mansion

85 nånstans å det är en bit att gå?
somewhere and there is a distance to walk?

86 O Finns det ingen äng eller nån större
is there no meadow or some larger

87 område behöver inte vara mer än en badmintonplan
area does not need to be more than a badminton field

88 eller nånting? .hh Finns det inget vid
or something? .hh Is there nothing by

89 vattnet?
the water?

90 C Ja det är en strand men det vete katten (.)
Yes it is a beach but I don't know (.)

91 då får de gå å titta om de klarar det då det är litet.
then they have walk and look if they make it then it is small.

92 O Äre: mycket folk däråå?
Are there many people there then?

93 C Ja det e fyra fem vuxna å nåra barn.
Yes there are four five adults and a couple of children.

94O→Mm de kanske kan se till få undan dem då så?
Mm maybe they can move them then so?

95 C Ja.
Yes.

In this fragment, the emergency call operator inquires about the proximity to the place where the drowning accident occurred (81). The emergency call operator also asks about a possible field with the size of more than a badminton court (86-89). The caller locates the site of the accident as the beach and expresses hesitation about landing on the beach with the wording "I don't know" (90). With the risk identification question if there are many bystanders on the beach (92) where lives are put at risk in that new accidents may occur when the air ambulance helicopter is landing. The caller confirms that bystanders are on the beach (93). At line 94, the emergency call operator gives a measure oriented risk reduction instruction formulated as a recommendation question which is placed in the end of the call. The instruction is not a general risk reduction instruction but particular to the helicopter landing situation aimed at to minimizing the risk of harm to bystanders. In response, the caller acknowledges the risk (95).

The risk identification and the risk reduction instruction at line 94 is given as a result of and a response to the possible risk of the air ambulance helicopter landing and bystanders are present on the beach. It is about an accident risk that bystanders may die or get injured when the helicopter lands. Consequently the emergency call operator wants to proactively take measures before the helicopter is landing performing an accident risk reduction action. Compared to Excerpts 7:1 and 7:2 this incident concerns an accident risk for third parties, i.e., bystanders on the beach. Another observation in comparison to Excerpt 7:2 is that fragment 7:3 is not about a current problem and acute risk as in 7:2 where a train can hit the patient. Here it is about a new possible accident risk problem to which participants need to respond by evacuating people from the beach.

When the air ambulance helicopter is dispatched to an emergency event, for instance, a road traffic accident, it is impossible for an emergency call-taker to have control of where persons are located at the emergency scene. It is then the ambulance helicopter pilot who is responsible for landing the helicopter safely. Emergency call-takers can participate in the emergency response process in different ways, for instance, by dispatching rescue services to provide assistance, for example, transporting medical staff to/from the helicopter and scene of the accident in case an air ambulance helicopter has not been able to land close the incident scene. When traffic accidents occur rescue services are automatically dispatched. Communication channels are then available for air ambulance helicopter and rescue personnel to talk to each other about these issues without including the emergency call-taker.

Risk management in medical emergency calls may be even more complex when the emergency response assistance needs are multiple and requires interprofessional risk management. Situations in which threats and violence have been identified by emergency call-takers should according to the emergency organisation guidelines be handled in cooperation with the police. If an emergency call-takerdetects a possible threat or violence situation that would generate a danger for the ambulance crew going to an emergency site then the emergency call-taker has a professional obligation to notify the ambulance crew about this. The decision to request police assistance in order to handle the situation is the responsible of the ambulance service. The ambulance crew then notifies the emergency medical dispatcher who contacts the police. Risk identifications by call-takers are often accepted by callers. Non-acceptance or resistance by callers comprise interactive and structural resources utilised by callers to engage in argumentations and negotiations with call-takers. Practices for accepting risk identifications in medical emergency calls are routinely performed through unmarked acknowledgements such as “ja” (“yes”). These responses by callers recognise the format of the preceding account as risk identifications. A format for callers to make resistance to and discarding risk identifications in medical emergency calls is to formulate the response as a proposal.

Risk monitoring

The overall activity of monitoring a patient at risk consists of the emergency call handler's continuous monitoring of: (1) the patient's condition, including her or his vital signs to see subtle changes in symptoms and conditions of the patient if they are deteriorating or have improved, and (2) the overall emergency situation. Risk monitoring includes observations of the respiratory rate, neurological status, heart rate and age of the patient. Risk monitoring in this organisational context means that the call-takercollects risk details about the emergency incident and monitors identified risks through telephone monitoring. Call-takers monitor symptoms and conditions of patients with a focus on thresholds for measures and decisions. Risk monitoring in medical emergency calls is a relatively short activity. Risk are monitored only during the actual phone call when the call-takeris responsible for monitoring risk.

Callers and bystanders at the emergency site usually monitor risk face-to-face with patients. Callers may also be positioned on a distance from a patient as in the drowning case presented earlier in this chapter when the caller dials the emergency number from a house nearby while the patient is situated on the beach surrounded by bystanders. The caller communicates with one of the bystanders in the emergency spot by shouting questions based on queries from the call handler.

Risk assessment

The risk assessment includes the critical reflection process of ordering and analysing risk details. The first step in the risk assessment procedure is risk specification. When callers describe patient symptoms and conditions, and emergency circumstances call-takers make in-depth risk assessments in the process of collecting risk data details relevant to the possibility of harming persons, including the regular assessment of the patient's age, breathing, altered level of consciousness, acute pain including severe emotional pain, physical symptoms, extent of injury and social and cultural environment of the patient and bystanders at risk. The second step in the risk assessment procedure is measure possibility reflection about what can be done in relation to identified risks.

Risk assessment types in medical emergency calls include: (1) risk assessments performed by the call-taker; and (2) co-assessments of risk performed collaboratively by the call-taker and caller. The risk assessment by the call-taker comprises medical history taking, questioning the caller about the current condition of the patient, an evaluation of the emergency situation and triage assessment prioritising risks according to the urgency of the patient's condition or danger details in the emergency circumstances. In many emergencies the triage is carried out by

the nurse, physician and emergency medical dispatcher together as a joint effort with a multi-professional overall view of the incident[46].

In the risk assessment questioning process call-takers use mainly clarifying questions as in Excerpt 7:2 about the person situated next to a railway track. Other large groups of assessment questions include yes-no questions for confirmation about current symptoms and yes-no formatted history-taking questions to determine a patient's past medical history relevant to the current illness or injury.

Call-takers listen to signals of distress, anxiety and vulnerability in verbal responses by callers. Emergency call-takers interpret the responses in terms of risk management to track possible risk for illness, injury, suicide, assault or abuse. The professional task and practice of performing risk assessments in medical emergency calls includes a problem analysis to assess the patient for changes in condition, character and acuity of the problem, the patient's physical, psychological and sociological statuses and a risk scenario analysis to calculate where the main dangers, obstacles and risks lie, the degree of danger and the risk management options being considered. The call-taker assesses if it is a risk for the patient or for bystanders, what is the issue for decision, the vulnerability of the patient by looking at the patient's exposure to risk and her or his ability to cope. The acute medical risk assessment is performed by the emergency call-taker in terms of probability and risk to analyse the problem, current and possible risk data, and probable causes, development and outcomes of risks in order to make a risk decision. The call-taker evaluates risk data, levels of risk and make judgements under conditions of uncertainty. The emergency call-taker also assesses the time and space frames of risks in the emergency situation and the risk management policies and responsibilities of the emergency control centre.

Cognitively the call-taker analyses risk based in the criterion-based assessment system of the medical index and past professional risk management knowledge and experience of the probability of risk and probable consequences in previous acute incidents. In this risk reasoning process the call-taker subjectively assesses the risk issue, acuity and cause of the problem and its related risks, past risk events, risk factors including the extent and severity of risk and the risk contextual and situational factors followed by predicting the risk probability and risk consequences from professional experience to protect the patient and other persons at the emergency site. When calculating risk the call-taker uses a practical and rationally oriented risk logic and risk limiting framework when identifying and selecting options and plans asking the contingency planning question "what if?" Risk assessment is emergency problem based and includes caller descriptions about past medical histories of patients. The call-taker makes claims about specific patient symptoms such as if the patient is confused, lethargic, disoriented, suffers severe pain and/or distress and the particulars of the emergency circumstances. The call-

[46] Interview with an emergency call-taker on 23rd September 2015.

taker assesses if the patient is in need of immediate life-saving intervention including, for instance, airway and medications.

The call-taker does not usually limit the risk reasoning but is open to all kinds of possible chains of events and assesses what can practically be done and not be done in regards to actual and potential risks through concrete measures or abstaining from measures in relation to identified risks. The call-taker may also make mistakes in the risk assessment work. The emergency call-takerutilises the medical index as a risk management resource and an error searching scheme when assessing risk but this index only covers a limited number of possible risk events that can materialise in medical emergency situations. Callers also assess patients at risk and risk situational factors and determine safety manoeuvres when patients and bystanders are in known risk areas. The risk assessment is the basis for risk-based decision-making practice described next.

Making decisions about elicited risks

The risk-based decision-making process in medical emergency calls is a conscious practice leading to a choice of a course of action from varying options that relate to immediate health and safety risks. Risk decision making in this institutional setting is also the systems and process of the organisation, including the medical index that supports call-takerassessment and decision making to assist patients and society. The risk management decision is based in the problem and its risk components and how they relate to each other, likelihood of particular risks, the needs and issues of the person or persons facing the problem and related risks, prospects, laws, regulations, policies, the formal structured approach in procedures of the emergency control centre, and past risk events in other medical emergencies.

After assessing risks the emergency call-taker uses the professional judgement and guidelines in the medical index to make decisions to reduce risks in the medical emergency situation. The call-taker may change risk decisions in light of new risk details and deteriorating medical conditions of patients and worsening circumstances in the ongoing incident. The call-taker may engage the caller in the risk-based decision-making. The professional task and practice of risk decision-making is closely connected to the risk identification, problem presentation, monitoring and assessment practices. Multi-professional risk decision making is also visible in my medical emergency call data when, for instance, the emergency medical dispatcher decides to send the ambulance service to an incident scene and the ambulance service then requests police assistance to co-handle risk making decisions in e.g., an ongoing fight between people or a suicide attempt situation. In the following two fragments callers make resistance to decisions made by call-takers.

Extract 7:4 [Infarct of the heart] (30B)

31 C→Nu vet ja inte om ja ska åka in
Now I don't know if I'm gonna go there

32 eller om ja ska,
or if I'll

33N→Det ska du göra.
You are going to do that.

34 C Eller ta nåt mer?
Or take something else?

35 N→Nä du får inte ta mer nitro inte.
No you can't take more nitro no.

36 C Ja det är bara tjugofem procents,
Yes it's only twenty-five per cent,

37N→Ja (1.0) du ska inte ta mer nitro
Yes (1.0) don't take more nitro

38 absolut inte du har tagit så många
absolutely not you have taken so many

39 så sörru.
so you hear.

40 C Ja.
Yes.

Risk interaction in medical emergency calls may concern decision-making about possible future overdosing risk. Particular risks may in this context be patients wanting to increase the dosage of a medication to dangerous levels higher than the maximum dosage allowed. Call-takers then usually set up dosing restrictions to patients preventing them from taking additional medication with potentially risky outcomes. In Excerpt 7:4, the patient has heart troubles and has previously had heart disease in the form of angina at several occasions. In the current medical emergency call, the patient states that she has commenced medical treatment by taking nitroglycerin. In line 34, the caller initiates the risk identification fragment by presenting her concerns of uncertainty about taking more nitroglycerin exhibiting that the caller does not know what measure should be taken. The uncertainty marking prompts risk identification instruction and decision-making by the nurse (35, 37-39).

In this segment, the nurse discourages the patient to take additional nitroglycerin (35) with a measure oriented risk identification instruction and decision using a strongly prohibiting directive. An agreement by the caller is relevant next because with her directive the nurse expects compliance by the caller. Instead of agreeing with the directive and the decision the patient downplays the dose level by using the lexical item "only" placed immediately before the amount where "only" expresses that twenty-five per cent is a small amount in this context (36). The nurse recognises what the patient has stated but again denies the patient the permission to take extra nitroglycerin using another prohibiting directive and motivation with the overdose risk reasoning that the dose taken earlier was too high (37-39). This time a decision-making agreement is reached by the patient acknowledging and aligning to the directive (40).

The risk identification directives delivered by the nurse in this excerpt are delivered in a strongly normative format which can be explained by that the caller has been asking for advice and possible overdose side effect risks of taking too much medication. The patient does not immediately comply with the presented restriction. Instead she resists the overdosing risk. With the risk identification the nurse creates a practical solution to and a shared understanding of the problem at hand and thus reduces risks associated with overdosing heart medication. This is a straightforward, proactive process of overdosing risk decision-making process including a measure of what the caller should do as a result of the call. The overdosing risk problem is the orientation of the caller in making a decision about the medication that suggests overdosing (34).

I will now present a risk decision-making process regarding a victim of domestic violence. Risk decision-making procedures related to domestic abuse in medical emergency calls is mainly focused on victims of domestic abuse suffering current abuse but also documents historic domestic violence. Identifying domestic abuse in calls for help is a rapid response to a current incident of violence and to possible future domestic abuse incidents.

After that violence has occurred where a victim either refuses to answer questions or answers only a few questions but the emergency call-taker may still conclude that the person is at high risk of harm. In Excerpt 7:4 the victim has been brutally punched and kicked by her partner, and there is a visible high risk that the domestic violence will be sustained in case the victim stays at home with the abuser.

This case demonstrates that the emergency nurse is oriented to a decision of evacuating the abused woman away from the abuser to a safe place where she can receive care and create future plans to reduce risks for further domestic violence. The woman would like a physician to visit her home while the emergency control centre nurse wants to send an ambulance to the woman. The different outlooks of the injured woman and the nurse become a crucial concern and risk decision-making problem to respond to by the nurse in an extended negotiation between the call participants.

Extract 7:4 [Domestic violence] (25B)

52 N Vill du att ja skickar fram en ambulans till dej?
Do you want me to send out an ambulance to you?

53 P Nej får jag en läkare.
No may I have a physician.

54 N Du skulle behöva ses om hela du.
You would need to be looked over entirely.

55 P Ja.
Yes.

56 N Kanske du kan få lugn å ro en stund också på sjukhuset.
Maybe you can get some peace and quiet also at the hospital.

57 P Ja nej det här är inte första gången.
Yes no this isn't the first time.

58 N Nä då kanske du kan få möjlighet att komma in på sjukhuset å få lite lugn å ro.
No then maybe you can come to the hospital and get some peace and quiet.

59 P Ja lugn å ro.
Yes peace and quiet.

60 N Å kanske få vidare hjälp med det dina- med det hära.
And maybe get further help with your- with this.

The woman has previously in the call repeated the request to get a physician to visit her at home. At line 52, the nurse delivers a recommendation question to the woman suggesting an ambulance to be sent to her also as a way to prevent further domestic violence risk. The turn at line 52 is given in a response shape and is offered as a question. With this turn the nurse gives the organisational response instruction offering ambulance assistance. The woman turns down the ambulance offer with a non-congruent response to the proposal and requests a physician (53). The nurse advises the woman that she would need a complete medical health check (54). The persuasion attempt by the nurse at line 54 is provided to convince the woman to accept an ambulance with an orientation towards the recommendation question at line 52. In response, the woman confirms the proposal (55) but decides to stay at home and not go in to the hospital with the consequence that the domestic violence risk still exists. The nurse suggests that the woman get some peace and quiet at the domestic violence free setting of the hospital (56) to change her life situation. The woman confirms this proposal and accounts for the repeated spousal abuse with a trembling voice (57) exhibiting future domestic violence risk. The nurse verifies the

domestic violence report of the woman and delivers another persuasion attempt about resting and having safety at the hospital (58). Repeating the proposal once more makes relevant an acceptance or a rejection by the woman. The woman responds by acknowledging the importance of rest and safety (59). The nurse then suggests that the woman may get further help with her problem through hospitalisation (60) and therefore continues the persuasion attempt series yet again demonstrating the domestic violence risk. The decision in this call is made by the abused woman when the nurse agrees to her request of sending a physician to her house.

Risk reduction

When a call-taker has identified and assessed risk the risk reduction activity is initiated. The call-taker usually has options for reducing risk in the medical emergency context, and routinely accepts certain risk if the risk is assessed to be on an acceptable level. Risk may also be completely eliminated by achieving appropriate courses of action to deal with risk events when they happens. The medical index of the emergency control centre provides preferred course of actions for achieving immediate or long-term goals and limits what kind of risks that are relevant in this emergency response context and restricts the risk reduction decision space of the call-taker. The call-taker routinely allocates responsibility for each risk and monitors the risk management plan in communication with the caller. Risk reduction regularly requires caller participation.

Features of the risk reduction practice in medical emergency calls include: (1) performing direct risk minimisation actions to increase patient safety and minimise situational hazards; (2) using the risk compliance arrangement in the medical index and local policies of the emergency control centre to ensure that risk management regulations are adhered to; and (3) monitoring risk events and making certain that callers or persons on the scene of the emergency carry out risk reduction measures in accordance with the medical index or professional risk management experiences of call-takers.

A critical part of risk reduction is mitigation planning. When risk decisions and risk reductions have been made, call-takers may plan for serious contingencies. Risk planning is pro-active actions towards possible future foreseeable risk outcomes such as deterioration of a patient's medical condition. Risk planning is based in the medical index of the emergency control centre and the professional risk knowledge of the emergency call-taker is grounded in an achievability and safety approach.

A risk issue that is observable in a large numbers of medical emergency calls is the risk for the ambulance service to not being able to enter buildings where patients are situated. Emergency-call takers consequently instruct callers to hold

doors open for or give gate codes to the ambulance crew. Call-takers also arrange to open gates when callers are unable to assist in getting access to buildings.

The nature and degree of risk in medical emergencies are affected by the local social and national social, economic and political contexts. When call-takers organise and mobilise the emergency response system to reduce and respond to risks, threats and dangers they carry out specific risk control operations including working in liaison with ambulance services and police. Call-takers routinely communicate with ambulance and police personnel in situations with safety concerns often connected to incidents with violent persons, fights between persons or suicide attempts exposing emergency response professionals and bystanders to risk.

Regarding risk identification the emergency control centre cooperates with the Safety Centre of the Public Transport and the Poison Control Centre. Surveillance in emergency situations in the transport system is provided by the Safety Centre of Public Transport with [47]hundreds of CCTVs monitoring ongoing incidents. The safety centre staff members detect and evaluate risk factors that may lead to medical emergencies involving ambulance services and police.

Police interventions in medical emergency calls in my data base were usually about suicide attempts and ending fights between persons. In one emergency, for instance, two women had been fighting and cutting each other with sharp objects. Here the police was needed for a safety interference making it possible for the ambulance crew to assist the injured women. Police officers also worked at calming persons with suicidal intentions to jump off bridges and other buildings. In suicide attempt situations safety issues are related to get a suicide attempt person to a secure place, for example, moving a self-harm person on the safe side of the railing and having him or her hospitalised to get the care they need. At the suicide attempt scene psychiatric ambulance, ambulance, police and emergency vehicle professionals cooperate.

The call-taker warns the ambulance crew at the time of dispatch when there is a risk for a suspected suicide attempt, serious violence, assault or threat scenario to the patient, the callers or other persons. It is then the responsibility of the ambulance crew to request police interference. When a call-taker suspects serious poisoning the ambulance service is dispatched to the scene of the incident. The Poison Control Centre may then be a support in the emergency response.

Finally, I would like to mention an operations related risk issue connected to the possibility for physical and non-physical (verbal abuse, threats, etc.) violence and aggression against ambulance personnel at incident scenes. When the ambulance crew arrives at or leaves an operational incident with incomplete risk

[47] Trygghetscentralen, Safety Centre of Public Transport, http://sl.se/sv/info/kundservice/trygghetscentralen/trygghetscentralen/ 17th July, 2014.

information they can experience varying risks such as when members of the public throw stones or other objects at the ambulance crew.

Discussion

This ethnography of risk management in medical emergency calls demonstrates a sociological approach that previously have not been used to study to risk different from the past abstract and macro-historical perspective of risk and the "risk society" in sociology (Beck 1992 and Giddens 1999) and medical discourse analytical studies on risk talk patterns (e.g., Linell et al. 2002). My perspective is neither linguistically focused as many of the past discourse analytical studies on risk, nor bio-medically focused on individualised risk or macro-historically focused on risk as in the risk studies by Beck and Giddens but rather interactive activity attentive to risk management in medical emergency calls.

Here I examine risk management in medical emergency calls as an interactive and organisational phenomenon. In this chapter, I have described that the task based risk management process in medical emergency calls is achieved through the use of seven key interactive practices performed by emergency call-takers on behalf of the emergency control centre : (1) risk listening through active listening after actual and possible risk; (2) risk questioning including risk detail gathering; (3) risk identification; (4) risk monitoring; (5) risk assessment; (6) risk decision-making; and (7) risk reduction which is about risk removal or risk reduction to satisfactory levels of risk.

Two central risk management procedures in medical emergency calls are risk identification and risk questioning. I have looked at systematics in risk identification practices and examined how call-takers identify risks and how they do this by performing risk identification questioning responding to accounts by callers about people at risk. Call-takers identify risk in the risk oriented questioning based on (1) relevant symptoms of patients, (2) general medical conditions of patients and (3) particular circumstances in each emergency. Call-takers routinely use questions to ensure that possible risks are identified in medical emergency calls. They ask risk searching questions to help callers think of inherent risk facts in emergency events. Callers are asked directly what potential risk issues they perceive. Changes in emergency circumstances and current locations or health states of patients are central facets of risk questioning in most medical emergencies. If it is not defined from the perspective of a caller what she or he is supposed to do in the acute situation it is relevant for call-takers to explain and motivate callers to identify risk and explain what to do at this point. Call-takers may ask risk identification questions to help callers orient to possible risks and anticipate what should be done to reduce risks. A search for clarity is significant in risk identification questioning in medical

emergency calls. The most intricate parts of risk identification questioning are often the controls made by call-takers. They use verifications to seek additional risk evidence in emergency situations. Getting callers to clarify emergency events requires persistence by call-takers. They routinely ask callers for clarification, take firm control of medical emergency calls and direct callers to provide call-takers with risk relevant details that they need to make sense of emergency situations. If a risk issue needs to be controlled call-takers may include implication descriptions of risks in the risk identification questioning activity. When call-takers identify risk they may use consequence directed risk questions to assess the importance of risks and get callers to comprehend risks. The risk identification questioning also includes risk assessment, decision-making and reduction proposing specific solutions and interventions in medical emergencies.

All risk identifications by call-takers and callers in my data lead to risk reduction instructions by call-takers. It is mainly the call-takers that identify risk. Callers may also identify risk as in the call when the caller identifies risk by describing that persons are on the beach when the air ambulance helicopter is about to land. Documented risk identification methods and risk questioning lists in the medical index on the computer screens of the emergency call-takers provide a restricted risk knowledge source of questions about risks associated with particular acute medical conditions. Call-takers must use caution when employing the medical index to ensure that their risk questioning activities are relevant and applicable to current emergency situations. The risk questioning points may also be shared with callers and other emergency response personnel such as ambulance services and the police.

Distinctive and systematic patterns of the risk management process in medical emergency calls include: (1) the systematic emergency organisation and call-taker emergency risk awareness, attention and action preparedness with an acute care limited system of risk identification and monitoring in the medical index which has been created by the organisation with a societal risk mandate to anticipate risk and be ready to act; (2) acute medical and mental health emergency risk, and emergency response risk; (3) the direct action character of risk management in medical emergency calls; (4) acute telephone communication; (5) the problem presentation based risk management practice; (6) life at risk and death issues here and now which is usually not the case in the other presented risk settings; (7) a shared professional call-takerand citizen caller task-centred risk management and involvement and (8) future and proactive risk management.

To summarise, managing risk in medical emergency calls is the practical risk response work and acute care risk orientation to varying and more or less unpredictable injury and disease progressions and future scenarios. When introducing a particular risk, call-takers package a risk within local emergency site and organisational contexts that demonstrate their professional knowledge about and control over risks. These transitional risks are usually handled by call-takers in

a straightforward way. Risk management practices are based on emergency situations, the severity of the incident, the needs, vital functions and stability of patients and the likelihood of an immediate life or organ threat. Another risk management practice in medical emergency call management concerns call-takers warning ambulance services about possible threats and seeking safety interventions by the police.

Managing risks in medical calls for help is characteristically about immediately life-threatening and extraordinary circumstances of patients. Comparing this interactive activity with other types of institutional calls it is similar to, for instance, risk management in poison information calls in regards to the acute nature and need for immediate measures. In risk management practices of medical emergency calls call participants manage emergency events and acute medical and mental health conditions of patients. Risk management in medical calls for help contains knowledge about symptoms, signs, conditions and life situations of patients and how measures should be prepared and performed in order to reduce the effects of acute disease complications of persons.

Risks and threats causing societal concerns are often related to hazards that give rise to risks which, in case they were to occur, could create changes in socio-political regulations, for instance, risk of events causing extensive or large scale damage or the occurrence of multiple fatalities in a single incident. Typical examples relate to railway, road or air travel accidents and fires. Societal concerns due to the occurrence of multiple fatalities in a single event is known as societal risk. The risk management activity in medical emergency calls is part of the standardised emergency response and preparedness operation in Swedish society. Risk management practices in medical emergency call management are shaped by patient symptoms and emergency events and also by the emergency response requirements of society and the emergency organisation.

Emergency call-takers manage the uncertainty that continuously exist in medical emergencies through risk identification and scanning. Every practice in medical emergency calls is aimed at minimising risk actions. Call-takers identify risks, rank risks as unacceptable, high, medium or low probability of occurrence and impact on patients, and carefully monitor and control these risks until medical emergency calls are ended or until ambulance services arrive to patients. The risks in medical emergency calls are usually caused by acute conditions and injuries, and if they occur, expect to have negative or positive consequences. Managing risk in medical emergency calls is a way to predict severe danger before it occurs, anticipate what could go wrong and decide what kind of actions can be initiated to avoid the problem. Risk management is thus an inherent part of decision making in medical emergency calls. Call-takers often involve callers by proactively presenting contingency and risk mitigation plans. Due to the complexity of risk management in medical emergency calls call-takers routinely used the structured approach of the seven fundamental practices of managing risk discussed in this chapter. In the final

empirical chapter of the thesis I discuss recommended actions call-takers make available to callers to take action in risk management sequences of medical emergency calls.

8 Instruction giving in medical emergency calls

Introduction to instruction giving in medical emergency calls

Instruction giving is a central activity in medical emergency calls. Call-takers respond to emergency events and care for patients in medical emergencies by talking about action plans and providing instructions to callers. Instruction giving in medical calls for help does not seem to be delivered randomly. It appears to be some systematic procedure regarding the placement of instruction giving in medical emergency calls. Some actions or instruction giving types tend to occur in certain call positions. It also seems to be that positionings are connected to specific problems.

The purpose of this chapter is to demonstrate how and why emergency call-takers and callers give instructions in medical emergency calls. I look at what realities call-takers and callers encounter, how they are designed and what actions instructions accomplish. I discuss how instruction giving respond to varying medical problems and events, previous actions and local circumstances. I examine how instruction giving is packaged interactively, in what positions of the calls instruction giving is initiated in and what instruction giving is about. I also investigate how callers respond to instructions, what emergency response measures call participants prepare and perform and what knowledge, skills, approaches and identities call participants exhibit, utilise and orient to in instructional sequences.

I use the term instruction giving rather than advice-giving when referring to directives and recommendations emergency call-takers deliver in Swedish medical emergency calls. Directives and recommendations in medical emergency calls are associated with acutely ill and injured patients and emergency places. Instruction giving in this interactive context is consequently rapidly achieved and more steering, direct, concrete and forceful than advice-giving. The time aspect in the medical emergency call context is the main reason why I use the term instruction

giving instead of advice-giving[48]. Advice-giving requires time for the advice-recipient to reflect about the given advice. In medical emergency calls there is minimal time for advice-giving which explains the call-takers' usage of direct instructions to callers. Instruction giving sequences in medical emergency calls are made up of emergency problem targeted and task oriented instructions of how "do this and do that" to get a desired result. Both instruction giving and advice-giving are about telling someone how to do something. However, advice means that it is up to the recipient to decide if she wants to do what is advised. Instructions are in themselves advice and call-takers are able to read listed overall advice in the medical index on the computer screen. This is advice that may be used as an emergency response resource to different medical conditions of patients. The general advice in the medical index is then recipient designed and detailed by call-takers as practical instructions to on-scene callers of how to respond to specific incidents. The acute medical care context of the medical emergency calls routinely requires callers to do what is instructed by call-takers.

In the day to day operating procedures of the emergency control centre call-takers give instructions about emergency measures based on the medical index of the emergency control centre, decision protocols, check lists and informal routines. Nurses and physicians are expected to act in agreement with laws and norms in guidelines of their professions. Emergency call operators at the emergency control centre is normatively constrained by the policies of the organisation to abide to the medical index when they give instructions based on symptoms of patients and current emergency events. The explanation for this is that they do not have the same formal education in medicine and nursing, as physicians and nurses do. Every county council in Sweden also have local treatment guidelines and routines that may impact the prioritization and management of incoming medical emergency calls[49].

The recommendations give certain rights and options for callers to decide of what to do in unforeseeable chains of events in emergency borderlands between life and death of humans. Instruction giving in medical emergency calls is a particular telephone call support activity for callers in need of instruction giving and emergency response assistance by call-takers.

[48] I am deeply appreciative to Karin Osvaldsson Cromdal who suggested that I use the notion of instruction giving instead of advice-giving when referring to the directives and recommendations in medical emergency calls.

[49] http://sosalarm.se/sv/Samhallstjanster/Vardtjanster_ambulans/Hur-gar-det-till-nar-ambulans-larmas-ut-/Prioriteringsuppdraget/

The contexts and contents of instruction giving in medical emergency calls

I will now describe the ethnographic context of instruction giving in medical emergency calls. Instruction giving is mainly initiated by call-takers (46 of 51 cases) in all of the instruction giving segments except in an instruction giving fragment about nitroglycerine (2 of 51 cases). In 3 of 51 cases a bystander to an emergency gives instructions to another witness of an emergency situation. Overall, 28 of 51 cases concern issues of a medical character. 23 of 51 cases are about emergency response procedures. 33 of 51 are given in the form of recommendations, and 18 of 51 instructions through directives. 1 of 51 instructions is given in the form of an explanation.

The basic shape or trajectory of instruction giving consists of three parts: (1) Initiation of the instruction giving sequence by call-taker or caller; (2) Transfer of instruction by call-taker that routinely builds on information given in the emergency account by the caller, and (3) Sequential uptake of instruction giving: Acceptance or rejection of the instruction by the caller after the instruction receiver has evaluated the instruction. I have identified three formats of giving instructions used by call-takers: (1) recommendation, (2) directive and (3) explanation.

In distinguishing between different groups of call-takers some observations can be made. Similarities between physicians, nurses and emergency call operators are that they are all task- and caller-centred when giving instructions and when performing the institutional work of the emergency control centre. Physicians give instructions that are patient symptom focused using mainly recommendation questions and treatment oriented utilising conditional recommendations. Nurses deliver primarily nursing care instructions about measures callers can perform to help patients in emergencies using mainly negatively and positively framed recommendation questions. Emergency call operators give instructions about emergency response procedures using primarily positively framed recommendations and straightforward directives. Emergency call operators employ an instructional repertoire when giving instructions to callers for different medical conditions which are listed in the Swedish index for acute medical reception of emergencies. They must then according to the requirements of the emergency control centre connect calls to nurses and physicians in case more complex medical and nursing care instruction giving becomes relevant.

Instructions by call-takers is more often accepted by callers than not. Non-acceptance or resistance by callers encompass interactional and structural resources utilised by callers to engage in argumentations and negotiations with call-takers about what types of ambulance assistance that would aid patients in the best possible ways. Instruction approval formats in medical emergency calls include: (1) call-takers giving instructions; (2) callers delivering a recognition or/and an account (3)

call-takers consenting to accounts by callers, regularly with a verification, an affirmative evaluation or a question about that acknowledgment and/or account. Practices for accepting instructions in medical emergency calls are routinely performed through unmarked acknowledgements such as “ja” (yes), “mm” or “nä” (no), marked acknowledgments such as repeats of key words within instructions (“yes he is breathing”), patient condition or symptom descriptions, measure descriptions, an assessment, the caller stating that she or he will perform the measure that the call-takerinstructed her or him to do or that the caller is lacking knowledge in how to perform a specific measure. These caller responses recognise the format of the preceding account as an instruction. Formats for making resistance to and discarding instructions in medical emergency calls include: (1) explicit disagreement; (2) disagreement and request and (3) proposal. Instruction giving in medical emergency calls may be described from the perspectives of the callers and call-takers.

Callers

Callers are on the scenes of emergencies available to orient to and act on instructions delivered by call-takers in the performance of first aid and emergency response measures when ambulance services have not yet arrived to patients. Family members of patients and bystanders may also act to convey first-hand medical and emergency data to call-takers in order to respond to on-telephone instruction giving. The first-hand facts collected by callers then form a basis for call-takers when transferring acute instructions to callers. In some medical emergency calls I observe caller involvement when callers themselves act upon their own initiatives, for instance, to open the door for the ambulance service, and instructions by emergency call-takers to make their situation better or prepare for the arrival of the ambulance service.

What instruction giving is about in medical emergency calls

The review of all instructional sequences in my data exhibits that acute conditions of persons and emergency events managed by call-takers and callers are asthma attack, bleeding, breathing difficulties, chest pain, cramps, diabetes, dizziness, drowning, fainting, kidney disease complications, oxygen assistance, spousal abuse, stomach pain, stroke, suicide attempt and unconsciousness. The contents of instruction giving may be the necessity of ambulance service care, hospital care, ensuring an open path between a patient’s lungs and the atmosphere in order for the patient to breath without restrictions, receiving oxygen, checking the contact level

of a patient, laying a patient in a recovery position, doing chest compressions, blowing into the lungs of a patient, if possible elevating the part of the body of a patient that is bleeding in order for the patient to receive blood to the head, bringing a bleeding to an end by pressing hard on the bleeding spot using a textile material until the bleeding discontinues, calming a caller and a patient, asking a caller to listen to the emergency call-taker, not taking more nitroglycerine when a patient has taken the maximum dosage, giving a diabetes patient sugar, milk and sandwiches, moving a patient away from a railway track, caring for a pet, watching and answering the phone, meeting up with the ambulance service and staying on the telephone line. These acute events may be the first times for callers that they have encountered emergencies. Emergency situations and patient symptoms that are acute from a medical perspective are typical and routinized for call-takers and emergency medical dispatchers. They face these problems on a regular basis.

Instruction giving is about, for instance, when a person is having breathing difficulties, allergic reactions, chest pain and heart disease and bleeding. Instruction giving when a person is having breathing difficulties and allergic reactions is about ensuring that the person can breathe freely and that the person is sitting up and has an adequate body position. If the person is unable to sit up then the person can be placed on the side in a recovery position. Instruction giving when a person is having chest pain and heart disease are to let the person sit or lie in a comfortable position, create peace around the person and follow instruction giving for breathing difficulties and allergic reactions. The same types of instruction giving for breathing difficulties and allergic reactions are given when a person is bleeding. Then the call-takerinstructs the caller to push hard on the bleeding spot with a clean piece of textile until the bleeding ends and place the bleeding body part high if possible. Call-takers listen actively for a response by callers, summarise and verify details in order to ensure that misunderstandings do not occur and then give instructions to callers.

Emergency call-takers

At a distance, and without being able to see what is going on, call-takers explain to untrained strangers how to carry out life-saving medical procedures. Call-takers are also often callers' only human connection before the ambulance crew arrives. First-aid instructions are scripted in the medical index of the emergency control centre and call-takers recipient design scripted instructions to get callers to follow them. Call-takers may also use callers to perform measures on patients. This caller education work by call-takers is about acquisition of knowledge and measure execution.

Instruction giving practices are characteristically prompted by the orientation of call-takers that callers are facing problematic situations and are in need of instructions. The activity of giving instructions in medical emergency calls is

emergency response, nursing and medical care oriented making call-takers actively listen to and give instructions to callers in order to immediately respond to patient symptoms based on the health and emergency situation of each patient. Callers may not always be susceptible to instruction giving because of the ongoing emergency events which may make them feel anxious and stressed out when talking to call-takers. Call-takers can in their way of interacting orient to the emotional involvements of callers by reassuring and supporting callers. Can we then see in medical emergency calls how call-takers reassure and prepare callers to respond to what may happen in the near future? In the following I will display that instruction giving in medical emergencies usually is delivered as caring, emotionally supportive and reassuring instructions from call-takers to callers about how and why callers can perform or prepare to carry out emergency measures on patients.

In the calls when it is relevant with an ambulance a primary goal orientation of call-takers is to get ambulances to patients as soon as possible. This is contingent on the priorities of the emergency events and the available emergency resources. Call-takers give instructions about possible measures of what to do to handle potential risks and consequences of specific emergency situations and medical conditions of patients. With instructions call-takers give solutions to problems and describe steps in first aid and caring measures on patients. In between instruction deliveries call-takers evaluate the general picture of current and past symptoms and medical conditions of patients. In their work call-takers determine the urgency and risk of problems and give instructions on courses of action. They offer instructions to callers without using visual cues which make the verbal communication skills of call-takers critical.

The practice of instruction giving in medical emergency calls is a task-oriented activity on the phone when participants routinely have lifesaving orientations in unpredictable emergency request response processes. The phenomenon is about setting up performance goals as early as possible in medical emergency calls and formulate action plans and measures to perform in order to reach result objectives in the near future. Acute measures that patients perform on patients based on instructions by call-takers can be life decisive and simplify the work of the emergency staff when they arrive to scenes of emergencies.

Fundamental practices of instruction giving in medical emergency calls

Four main groups of instruction giving are visible in medical emergency calls: (1) acute flow maintaining instruction giving, (2) measure oriented instruction giving, (3) organisational response instructions to problems of callers and (4) summarising instruction giving.

Acute flow maintaining instruction giving in medical emergency calls

Acute flow maintaining instructions refer to how call-takers handle non-compliance to the normative social order of medical emergency calls through delivering institutional priority instructions to callers in the process of medical emergency calls. In identifying how call participants provide and respond to acute flow maintaining instructions in medical emergency calls, I review contents, positions, formats and responses in instructional sequences.

Establishing and sustaining telephone contact with callers

One group of acute flow maintaining instructions in medical emergency calls concerns establishing and sustaining the telephone contact between call-takers and callers. In medical emergency calls call-takers routinely focus on keeping callers as active and available call participants and not vice versa. Callers usually orient to being promised ambulance assistance and do not always see the relevance of staying on the phone after the ambulance request has been granted. They are thus ready to hang up the phone at the ambulance granting point of the call. The call handler, on the other hand, seems to keep the caller on the telephone line until the ambulance service arrives to the emergency site in order for the caller to providing details about the event and also be able to perform acute measures on the patient through requests by the call handler. The activity of establishing conversational contacts may occur at any point in medical emergency calls and is usually initiated by call-takers and exceptionally by callers.

Directing the on-scene caller to not hang up the phone (1 of 51 cases)

Sometimes the telephone contact between call-takers and callers is threatened in medical emergency calls. It is therefore important to uphold the telephone contact with the caller until the ambulance service arrives in order to keep the caller as an information providing source. Call-takers have little control over keeping callers on the phone. Callers can hang up or leave the phone at any point in the calls. One method that call-takers use in order to keep callers on the phone is to request a caller

to not hang up which is demonstrated in Excerpt 8:1 about a person with acute kidney disease.

Extract 8:1 [Kidney disease] (1A17:111)

91 D En ambulans å en akutbil är på väg
An ambulance and a rapid response car are on their way

92 å de är snart framme eh då är det bara att se till
and they are soon there eh then it is just to ensure

93 andningsvägarna är så fria som de kan
the airways are as open as possible as they can

94 å samtidigt framstupa läge.
and at the same time recovery position

95 C Vänta lite jag ska titta bara.
Wait a moment I will just have a look.

96D→Håll linjen där lägg inte på.
Stay on the line there don't hang up.

97 C Nä nä nä för guds skull.
No no no for god's sake.

When the caller informs the physician that he will leave the phone to walk to the patient to check on his health status the physician anticipates a premature hang-up. The problem to solve is consequently for the physician to prevent the caller from hanging up and keep the caller on the phone. As a response and solution to the problem the caller is directed by the physician to not hang up the phone in order not to lose the telephone contact with the caller. The physician directs the caller of what to do with two acute flow maintaining ambulance directives placed in the same call turn. Overall in the medical emergency call, these acute flow maintaining directives are positioned in the middle of the call inside the physician's interview of the caller (a physician-caller interaction phase that goes on until turn 209 where the call ends). The first directive urges the caller to stay on the line (96). The second directive orders the caller not to hang up (96). The physician uses straightforward request forms of instructions and the directives are given interspersed in other emergency call activities. The physician's two directives are repeatedly acknowledged by the caller in the following turn with a triple "no" strongly promising the physician that he will not hang up the phone (97).

Directing the caller to find another person to watch the phone (1 of 51 cases)

The next excerpt with an acute flow maintaining directive in medical emergency calls is connected to Extract 8:1 in which the caller is requested to stay on the line and not hang up. Excerpts 8:1 and 8:2 are examples of the same phenomenon and interactive problem of keeping the telephone contact with people at the site of the emergency. They are shaped in a similar way and it is the same practice of keeping the telephone contact. The only difference is that in Excerpt 8:2 another person is needed to answer the phone when the caller will leave the landline phone to check the current condition of a person in a drowning emergency. A directive is then delivered to the caller by the emergency call operator to find another person to watch the phone. The reason for giving this directive is to avoid the risk of losing the telephone contact with people on the scene of the emergency.

Extract 8:2 [Drowning] (19A)

96 O→Finns det nån som kan passa (0.5) telefonen där?
Is there anyone who can watch (0.5) the phone there?

97 C Du kan få ett annat nummer här eh så tar ja .hh.
You can have another number here eh so take I .h

In Extract 8:2 the emergency call operator provides an acute flow maintaining instruction through a recommendation question (96) which is placed in the end of the call. This is an exception in the acute flow maintaining instruction data in which call-takers routinely use directives. The caller replies to the instruction with an offer of giving the emergency call operator a phone number (97).

Instructing the caller to answer questions (1 of 51 cases)

A technique that call-takers use in order to sustain a caller as a telephone connection and an information provider is to direct the caller to answer questions. With this acute flow maintaining instructing the emergency call operator steer the caller back to the medical emergency call interview activity which is demonstrated in Excerpt 8:3 about a heart attack:

Extract 8:3 [Heart attack] 43A4:25)

48 O Så han har haft det i några timmar då?=
So he has been having it for a couple of hours then?=

49 C HAN HAR HJÄRTINFARKT VAD SÄGER DU:?
HE HAS HEART ATTACK WHAT ARE YOU SAYING:?

50O→Men kan du svara på mina frågor?
But can you answer my questions?

51 C VADÅ FÖ:R?
WHY?

52 O Därför att det är bra för ambulanspersonalen att veta så
Because it is good for the ambulance personell to know as

53 mycket som möjligt.
much as possible.

Extract 8:3 taken from the end of the medical emergency call displays elaborated negotiations between the emergency call operator and the caller. At line 48, the emergency call operator asks the caller how long the patient has been having the heart attack in order to collect patient status data for the ambulance crew which is on their way to the patient. The caller does not answer the question which is a problem for the emergency call operator because this means that the caller is not participating in the interview activity of the medical emergency call. Instead the caller launches a repair in response to the inquiry. The previous inquiry by the emergency call operator is treated as a trouble-source by the highly distressed caller and she produces with increased volume the reason for the call again and questions the preceding turn by the emergency call operator at line 49. The emergency call operator response to the repair initiation is not an explanation but a coercive request to the caller to answer the questions (50). The recommendation question at line 50 is an acute flow maintaining instruction implying that the caller should participate in the emergency call interview and answer the questions in order for the social order of the emergency call to function. The caller responds by questioning this social order and the interrogation activity in the emergency call with a "WHY" at line 51.

A problem for the emergency call operator is then to get the caller to continue to answer the interview questions of the medical emergency call. The questioning by the caller is as a result followed by the emergency call operator's explanation and formulation of the reason for this interview activity at lines 52-53 which closes the questioning-explanation sequence. The acute flow maintaining instruction is here as in other examples of this interactive phenomenon not given as a part of the interview activity but interspersed in other medical emergency call activities. It is a coercive form of instruction where the outcome is forced upon the caller. The caller is instructed to obey the emergency call operator and follow the emergency call order of the emergency control centre. In medical emergency calls call-takers expect callers to function as cooperating and compliant connection partners between patients and call-takers.

Instructing the caller to calm down (1 of 51 cases)

Another type of acute flow maintaining instruction giving is requesting the caller to calm down which is shown in Extract 8:4.

Extract 8:4 [Bleeding and breathing difficulty on the train track] (1A) W=Bystander (another person at the emergency site besides the caller)

33 C Det stämmer han ligger ju här skicka en ambulans.
It's correnct he lies here send an ambulance.

34N→Men ja måste ju veta var det är nånstans om du lugnar ner dej lite nu.
But I need to know where it is located if you calm down a little bit now.

35 N [Location] säger du?
[Location] you say?

36 C Ja.
Yes.

When the anxious caller requests an ambulance at line 33 the nurse provides an explanation and instructs the caller to calm down with an acute flow maintaining instruction placed in the end of the call. The nurse gives the instruction in order to find out the exact location of the emergency (34). Call-takers have the organisational mandate to grant ambulance service. When the ambulance decision has not been made and the call-taker needs to collect additional data about the incident in order to make the ambulance decision and the caller requests an ambulance in an earlier position of the call (line 33) an explanation by the nurse of why more questioning is important becomes relevant (line 34). The caller does not respond verbally to the instruction requesting the caller to calm down. Instead the nurse launches a location confirmation request (35) which the caller responds positively to (36).

Call-taker explanation when the caller does not follow the social order of medical emergency calls (1 of 51 cases)

Another type of acute flow maintaining instruction giving is related to when the caller is procedurally out of line by requesting an ambulance in the middle of the interview. In the majority of the medical emergency calls in this data corpus callers request ambulances in the beginning of the medical emergency calls with the implication that call-takers initiates the medical emergency call interview in order to collect details about the possible emergency. In the end of the call the call-taker grants or declines the ambulance request. This is viewed by call-takers as a normal occurrence. When a caller interrupts the interview activity by requesting an ambulance inside the interview phase of the medical emergency call the call-taker

views this as a problem with the immediate consequence that the call-taker gives an acute flow maintaining instruction functioning as a solution to the problem. When the caller requests an ambulance at line 33 the nurse steers the caller to comply with the medical emergency call norms. She does this in order to make the caller follow the social order of the emergency control centre and gather information about where the incident occurs. She is here doing an acute flow maintaining instruction with an explanation about that she needs to know where the emergency is located at line 34.

Directing the caller to listen (1 of 51 cases)

The final case of acute flow maintaining instruction giving is about the fundamental practice of listening in medical emergency calls which is exhibited in Extract 8:5.

Extract 8:5 [Dizzy and stomach pain] (20A)

18 C Va sa du?
What did you say?

19O→Lyssna på mej nu.
Listen to me now.

20 C Ja.
Yes.

A prerequisite to deliver instructions in medical emergency calls is that callers listen to call-takers and can hear what they are saying. If this is not the case call-takers request callers to listen. In the excerpt above the caller expresses not having heard what the emergency call operator said. The emergency provides an acute flow maintaining instruction through a directive (19) placed in the middle of the call which the caller replies to by an unmarked acknowledgement (20).

I have here provided an analysis of key points of acute flow maintaining instruction giving in medical emergency calls including an overview of its character and social patterns. The features are distinctive to the medical emergency call context. In this interactive context call-takers give rapid acute flow maintaining instructions about how callers should respond to the institutional context and the normative modus operandi of well-worked phone manner in emergency calls. Some degree of compliance by callers is necessary in order to manage components that obstruct the flow in medical emergency calls. The acute flow maintaining instruction giving functions as a form of caller regulation practice in which call-takers direct and explain how the callers should act and orient in emergencies. In this procedure call-takers with the organisational mandate to make ambulance dispatch decisions encourage callers to fully participate in the emergency response

work and comply with the norms and requirements of medical emergency calls. This makes acute flow maintaining instruction giving highly asymmetric in character. The examples of acute flow maintaining instruction giving in the data are similar in regards to content, form, placement and response.

Measure oriented instruction giving in medical emergency calls

There are three forms of measure oriented instruction giving: (1) when callers receive instructions about performing measures; (2) when callers obtain instructions about looking for patient condition and emergency related information and (3) when callers are given instructions of what to do in the format "if X happens then do Y".

When call-takers instruct callers about performing measures (31 of 51 cases)

Call-takers provide instructions to callers about what measures to carry out in order to care for persons and handle specific emergency situations with varying risks. In the instruction giving practice call-takers can give solutions to emergency problems and describe steps in first aid and care for patients.

In Extract 8:6 the caller describes a patient that is bleeding. When the caller talks about bleeding it makes it relevant for the call-takerto give instructions in this early phase of the call. The emergency call operator consequently delivers immediate instructions with the specific institutional goal and task to stop the bleeding. Here the emergency call operator asks a question about the event that simultaneously is an instruction (14).

Extract 8:6 [Bleeding] (8A)

12 O Jaha ja blöder han mycket eller (0.2) eller hon?
Yes yes he's bleeding a lot or (0.2) or she?

13 C Ja det är ganska mycket men ja kanske-
Yes, it is quite a lot but yes maybe-

14O→Har ni gjort något för att stoppa blödningen?=
Have you done anything in order to stop the bleeding?

15 C Nä vi har bara nu lagt på en handduk här,
No we have just now laid a towel here,

16 O Ja just det.
Yes, that's right.

17 C Ja.
Yes.

18O→Håll handduken på där bara så ska vi- vi är på väg där.
Just hold the towel on there so will we- we are on our way there.

19 C Mm okej det är bra.
Mmhm okay that is good.

The bleeding of the patient initiates the instructional sequence. The problem is that the bleeding is rather large (13). This bleeding is the context for upcoming instruction in this medical emergency call. The problem becomes manifest and is part of the interview phase of the medical emergency call. The fact that it is a medical emergency call and that the person is bleeding entitles the emergency call operator the institutional mandate to take on an instruction giving identity. In response to the bleeding the emergency call operator provides a positively framed recommendation question about the measure and event status (14). The question itself does not have the shape of an instruction. On the surface it is not an instruction but a question and it may be instruction implicative. With the question the emergency call operator exhibits the view that the caller has competence in stopping the bleeding of the patient. In this position of the call the question may function as a type of pre turn to the later instruction at line 18. This pre turn seems to be a kind of control action referring to if a particular measure has been performed. As a response, the caller rejects the recommendation question and at the same time describes the measures they have taken to stop the patient's bleeding (15) which the emergency call operator acknowledges (16) and the caller confirms (17). The instruction sequence continues with the directive by the emergency call operator at line 18 which the caller confirms and assesses positively (19). The instruction is built on the previous measure efforts by the persons in the home of the patient where a towel is located on the bleeding source. The instruction includes the aspect of hand pressure on the towel. Extract 8:7 displays how the emergency call operator gives a measure oriented instruction about the evacuation of a group of people (94).

Extract 8:7 [Drowning] (19A)

93 C Ja det e fyra fem vuxna å nåra barn.
Yes there are four five adults and a couple of children.

94O→Mm de kanske kan se till få undan dem då så?
Mm maybe they can move them then so?

95 C Ja.
Yes.

Here the emergency call operator gives a measure oriented instruction formulated as a recommendation which is placed in the end of the call and is acknowledged by the caller (95). Extract 8:8 demonstrates measure oriented instruction giving in which the nurse gives an instruction through an injury prevention and control recommendation about moving the patient away from the danger zone (5). The instruction is placed in the beginning of the call which the caller replies positively to (6).

Extract 8:8 [Bleeding and breathing difficulty on the train track] (1A) W=Bystander (another person on the scene of the emergency besides the caller)

1 N SOS ala:rm.

2 C Hejsan kan du skicka en ambulans till [location].
Hello can you send an ambulance to [location].

3 N Ja vad är det som har hänt där då?
Yes what is it that has happened there then?

4 C Det är en kille som har tror ja han har ramlat på spåret å blöder.
It is a guy that has I think he has fallen on the track and is bleeding.

5N→Mm har ni fått upp honom från spåret?
Mm were you able to get him up from the track?

6 C Jaa.
Yes.

7 N Det har ni fått ja ja var blöder han nånstans då?
You have been able to do that yes yes where does he bleed then?

8 C Vänta vänta lite (0.2) ja ska bara gå upp till honom här.
Wait wait a minute (0.2) I'll just go up to him here.

9 N Mm.

10CtoW Hur är det med killen?
How is the guy?

11WtoW→Han får inte so- somna.
He is not allowed to sleep.

12 C Han blöder mycket från näsan å har svårt för att andas,
He is bleeding a lot from the nose and has difficulty breathing,

13WtoW→Han får inte sova- han får inte somna.
He's not allowed to sleep- he is not allowed to sleep.

14 N Va sa du han blöder mycket från näsan å?
What did you say he is bleeding a lot from the nose and?

15 C Och har svårt att andas.
And has difficulty breathing

16 N Svårt att andas?
Difficulty in breathing?

17 C Ja.
Yes.

18 N Mm.

19 C Å ont i huvet.
And pain in the head.

20 N Ja.
Yes.

21WtoW→Han ska inte somna han ska inte sova
He shouldn't fall asleep he shouldn't sleep.

22 beror på att han är sjuk vaknar inte egentligen.
depends on that he is ill doesn't wake up really.

23 N Mm ja var är det här är det ute mitt ute på spåret eller?
Mm yes where is this is it out in the middle of the track or?

24 C Ja mitt ute i spåret tåget som går söderut.
Yes in the middle of the track the train going south.

25 N Södergående tåg.
South going train.

In this data fragment another person on the the emergency site besides the caller repeatedly delivers directives to another bystander of the emergency as a non-professional instruction giver. This is the single case of this activity in the data corpus. This person gives directives about that the patient is not allowed to go to sleep which are placed in three positions in the beginning of the call at lines 11, 13 and 21. The responses to these directives from the other bystander are not audible when listening to the audio-recorded emergency call. The next subgroup of measure oriented instruction giving in medical emergency calls is about when callers receive instructions about searching for patient and emergency event related details.

When call-takers instruct callers to look for patient symptom and emergency event details (7 of 51 cases)

In medical emergency calls it is always important for call-takers to receive information from callers to rapidly and accurately assess symptoms and conditions of patients, predict the need for immediate life-saving instructions, carefully control and monitor conditions of patients to assess emergencies, anticipate expected resource needs and give pertinent instructions to callers to await available ambulances. Call-takers give instructions to callers about how they should look for patient health data and other relevant emergency facts with the aim of obtaining relevant details from callers.

An example of this practice is taken from a medical emergency call in which a physician provides measure oriented instructions through recommendation questions in the shape of diagnostic questions. Here the caller updates the physician about the breathing and contactable status of the patient. The physician recommends the caller to observe the breathing of the patient so that the physician can diagnose the condition of the patient and give care instructions. Another example of this type of measure oriented instructions is demonstrated in Extract 8:9 concerning a stroke emergency in which the caller indicates in the presentation of concerns the need for urgent medical instructions from the physician.

Extract 8:9 [Stroke] (1A5 40)

37 D Ja (.) ligger hemma på golvet?
Yes (.) lies home on the floor?

38 C Ja det gör han,
Yes he does,

39D→Kan du se om han andas?
Can you see if he is breathing?

40 C Ja han andas.
Yes he is breathing.

41D→Ja men det går inte få någon kontakt med honom?
Yes but it is not possible to get any contact with him?

42D→Nä men han andas i alla fall som vanligt eller
No but he is breathing anyway as usual or

43 e andningen annorlunda på något sätt?
is the breathing different in some way?

44 C Ja: (.) det vet ja inte,
Yes (.) I don't know,

45D→Men du ser att han tar regelbundna
But you see that he is taking regular

46 andetag i alla fall?
breaths anyway?

47 C Ja,
Yes,

48 D Det är viktigt.
It is important.

49 C Ja.
Yes.

In this call the physician delivers a measure oriented instruction by asking a recommendation question about the breathing of the patient which is placed later in the call (39). This turn is also offered as a diagnostic question in order to evaluate the respiratory status of the patient. The caller updates the physician about the health status of the patient by stating that the patient is breathing (40). The answer to the question guides the physician to ask further questions. Subsequently the physician asks another diagnostic question which is also doing a negatively framed recommendation question about the contactable status of the patient (41). The physician then gives a recommendation to the caller to observe the breathing of the patient in order for the physician to diagnose the condition of the patient (42-43). The caller is unable to give a reply to the query (44). As a result, the physician launches another recommendation question which is also a diagnostic question (45-46) that the caller acknowledges (47). This is an additional recommendation to the caller to take action to observe the patient and assist the physician to diagnose the medical condition of the patient and provide an instruction about the treatment of the patient. Finally, the physician offers an assessment (48) which the caller recognises (49).

In Extract 8:10 about the life-threatening condition drowning immediate measures are required to alleviate symptoms and save the life of the person. Consequently, the emergency call operator checks with the caller regarding the competence availability at the incident scene exploring mouth-to-mouth resuscitation abilities of the caller and other persons (105-106). This control question is placed in a later position of the call and is delivered through a positively framed recommendation question which the caller responds to positively (107).

Extract 8:10 [Drowning] (19A)
104 O [Phone number]

105O→.hhjja mm finns det nån som vet hur man gör så att säja om
.hhyes mm is there anyone who knows how to do so to say if

106 med konstgjord andning å så?
with mouth to mouth resuscitation and so?

107 C Ja de håller på där.=
Yes they are doing it there.=

When call-takers instruct callers of what to do in the format "if X happens then do Y" (4 of 51 cases)

The third subgroup of measure oriented instructions is about what callers should do in the format "if X happens then do Y"[50]. An important method in instruction giving practices of medical emergency calls is risk management and measure planning when call participants monitor current conditions of patients in relation to future, hypothetical conditions, symptoms or emergency related problems to optimise patient health outcomes. Needs then exist in the near future to carry out first aid and emergency response measures before the arrival of ambulance services to save the lives of patients, for instance, to initiate resuscitation efforts. Issues in this emergency context are related to what first aid and emergency response measurs that should be carried out, who should perform measures and how these measures should be carried out.

In instruction giving about future, hypothetical conditions and measure preparedness in medical emergency calls callers stand ready to perform measures. The joint focus of the call-taker and the caller is if there would be a deteriorating change in the level of consciousness or vital functions of a patient such as a cardiac arrest, chest pain, respiratory arrest, severe respiratory distress, critically injured trauma patient or an overdose. "If X happens then do Y" instruction giving refers to acute conditions that are not in the reality of the caller at the moment but may become a reality in the near hypothetical future when changes in acuity occur. This type of instruction giving is given in high risk situations in medical emergency calls. Competences of call-takers are demonstrated in measure oriented instructions in the format "if X happens then do Y". An example of instructions provided in this format is "in case he gets X" "then we have to ensure that he gets done Y", that is delivered in a medical emergency call about kidney problems. Another example is "Then it is X" "in case he gets Y" provided in the same medical emergency call about kidney complications. In these examples the call-taker's acute care competence is demonstrated. In a third example the format "because" and "so that" is used as in the turn "Good because if he sits up and you can give a pair of sugar cubes to begin with so that he recovers".

[50] Landqvist (2005:214) has discussed "just-in-case advice" in calls to a Poison Control Centre.

Extract 8:11 is taken from a medical emergency call about a man with a diagnosed kidney disease where measure oriented instructions are given about future, hypothetical conditions. The background to the call is that a patient who suffers from kidney disease has collapsed in the bathroom of his home. The son calls the emergency number and talks to a nurse. Later in the call, the physician continues the interview with the caller. In the physician evaluation of the patient he makes acuity judgements and determines what aspects the caller needs to focus on in the emergency situation which is transferred in measure oriented instructions to the caller. During the call, the wife of the patient is located next to her husband in the bathroom when the son calls the emergency number from a landline phone, and family interaction between the son and his mother occurs.

With diagnostic questions the physician rapidly assesses and prioritises the condition of the patient. After a series of queries the physician gives measure related instruction in the format "when X then Y", as a consequence to the collecting of details from the caller about the condition of the patient.

Extract 8:11 [Kidney disease] (1A17:111)

91 D En ambulans å en akutbil är på väg å de är snart
An ambulance and a rapid response car are on the way and they are soon

92 →framme eh då är det bara att se till att andningsvägarna är så fria
there eh then it is just to ensure that the airways are as open

93 som de kan å samtidigt framstupa läge.
as they can and at the same time recovery position.

94 C Vänta lite jag ska titta bara.
Wait a moment I will just have a look.

Here the physician tests a specific reality situation and instructs the caller to have a preparedness orientation and to take on the role as a life-saver. Together the call participants plan the emergency measures in a realistic way for the caller to achieve in relation to future, hypothetical conditions of the patient. The caller here receives coaching support from the physician. The life-threatening state of the kidney patient is causing the physician to prepare the caller to be on standby to perform first aid on the patient before the ambulance service arrives if it would be necessary. The pro-active telephone supported cardiopulmonary resuscitation-preparation is at the same time a test of the caller's knowledge about and competence in cardiopulmonary resuscitation. The first cardiopulmonary resuscitation proposal includes both compressions and mouth-to-mouth resuscitation. The caller displays that his competence is limited to mouth-to-mouth resuscitation. During this activity the son

walks over to the patient at two occasions to assess his condition to describe it to the physician and to be certain that the correct medical protocol given by the physician is followed demonstrating the commitment of the caller to the instruction offered by the physician and the medical authority of the doctor.

Asking the basic conversation analytic question of "why that action now?" clarifies to the interactional participants and the analysts what the action does in relation to prior actions and what it projects about the ensuing actions. In the above excerpt, by reassuring the caller that the ambulance service is on its way and delivering a first aid recommendation the physician takes on an instruction giver identity entitling the physician to offer a first aid instruction to the caller regarding the breathing and position of the patient (91-93). The physician provides first aid steps and actively encourages the caller to share the first aid orientation when the call proceeds. In epistemic terms, the physician asserts his knowledge about life-saving procedures. This agenda-setting exchange guides the caller what to think about and to follow the first aid instruction of the physician by leaving the phone to start the first aid procedure in two steps ensuring that the airways of the patient are open and that the patient is situated in a recovery position.

The physician prepares the caller to save the life of the patient by adopting a joint treatment-orientation with the physician. This is achieved through a series of exchanges regarding cardiopulmonary resuscitation and mouth-to-mouth resuscitation. The aim of cardiopulmonary resuscitation is to treat a person who is experiencing unconsciousness, a cessation of breathing or sudden cardiac arrest. In light of this type of result I pose the question, what happens in a medical emergency call in regards to co-handling the condition of the patient when those close to the patient are involved? How does it come about and is introduced that they are instructed to be prepared to actually perform first aid like cardiopulmonary resuscitation themselves? Not giving cardiopulmonary resuscitation to the patient who stops breathing and does not have a pulse generally follows in the death of the patient.

In light of this point, it is noteworthy to state that treatment options for patients increase if callers can become involved and take on a first aid-giver identity and responsibility in the medical process while they wait for the ambulance services to come to patients. Family members in medical emergencies may become active players in acute medical events by acting on first aid and emergency response instructions and integrating first aid responsibilities into their actions and identities as callers (instruction-receivers and first aid-givers) and the emergency nature of the call gives the right to call-takers to take on the instruction-giver identity.

The caller in the emergency with the kidney disease patient has been informed that the ambulance service and the rapid response car are on their way to the scene of the crisis but the patient may die in the interim. In the instruction-giving process the caller states that he has knowledge about mouth-to-mouth resuscitation and thus displays his first aid-giver identity to the physician. The physician encourages the

caller to take on this first aid-giver responsibility and use this first aid competence if needed. The caller is consequently chosen by the physician to perform the life saving treatment on the patient.

The preparation of the caller to act on his first aid-giver identity is made through precise measure oriented instructions by the physician to care for the patient, assuring the caller with an ambulance assistance promise and a proactive plan in case the patient stops breathing. The caller is as a result oriented to the fact that the emergency vehicles are on their way which may be calming information for the caller. The physician expects the caller to perform life-saving measures on the patient by giving him technically based instructions demonstrated in Extract 8:12.

Extract 8:12 [Kidney disease] (1A17:111)

109D→.hhja okej men då är det bara att se till att andningsvägarna är
.hhja okay but then it is just to ensure that the airways are

110 fria så att han får luft hela tiden å hjälp är på väg
free so that he gets air all the time and help is on the way

111→ å är det så att han får andningsuppehåll nu så får vi se till
and in case he stops breathing now then we make sure

112 att han får gjort hjärtlungräddning å konstgjord[andning?
that he gets done cardiopulmonary resuscitation and mouth to [mouth resuscitation?

113 C [Nä det har
[No I have

114 ja har inte gjort det.
I **haven't done that.**

115D Det har du inte gjort det nä.
You haven't done that no.

116 C Ja har gjort konstandn- konstgjord andning på dockorna.
I have done mouth breathing – mouth to mouth resuscitation on the dolls.

117 D Du har blåst luft i alla fall.
You have blown air at least.

118 C Ja.
Yes.

119D→Då är det första hjälpen om han skulle få andningsuppehåll.
Then it is the first aid if he would stop breathing.

120 (3.0)

121 C Ja nu verkar ( ).
Yes now seems ( ).

The physician initiates treatment preparedness instructions marking the ordinariness and the manageability of the emergency task operation through the lexical choice of "just" and stressing the priority of the breathing with a recommendation. The physician continues the instruction-giving delivery with a conditional recommendation (109-112) which promotes the life-saving competence of the caller. By giving the "just-in-case instruction" the physician explains the near future first aid plan and technique in order to prevent failure to keep the airway open which may result in total breathing obstruction or partial breathing obstruction. The physician reformulates the idea of the importance of having open airways which was described by the physician in the previously extract. The caller then informs the physician that he is lacking experience in performing cardiopulmonary resuscitation (113-114) which is verified by the physician in a negated format (115). Instead the caller declares his identity, commitment and competence as a mouth-to-mouth resuscitation-giver (116) which is verified by the physician as a shared knowledge displaying that he has understood the reference frame of the caller (117) and then affirmed by the caller (118). After the acknowledgement by the caller the physician continues to instruct the caller to carry out basic first aid (119) which after a pause is accepted by the caller (121).

The physician and the caller follow a detailed procedure outline for the patient breathing and recovery position orientation. In order to enhance the success of the treatment through a caller education and practical preparation procedure, the physician creates an action plan and motivates the caller by rehearsing and reviewing first aid skills to set the stage for potential measure efforts by the caller. The excerpts show that this plan is changing based on the knowledge of the caller. In this example the action plan initially includes both cardiopulmonary resuscitation and mouth-to-mouth resuscitation. After the exchange between the physician and the caller about the first aid knowledge of the caller the pre-ambulance arrival plan is reduced to only include mouth-to-mouth resuscitation. The physician is consequently demonstrating flexibility by recipient designing the instruction in relation to the knowledge of the caller to ensure that the patient will receive first aid by making the caller feel positive and confident to perform the instructed first aid measures.

While waiting for the emergency response services the informal life savers in the caller and the wife of the patient form the first aid team caring for and preparing to care for the patient until the point when the formal emergency life savers arrive on the scene of the patient. The physician acts as the medical leader and medical emergency educator giving proactive instructions to the family members of the patient about being prepared by talking about acute measures what to do next in this

extremely serious emergency. In this call the mouth to mouth resuscitation treatment is not completed by the caller because of the arrival of the emergency response teams.

The physician is distinct in the instruction practices by the amount of details he can explain to the caller, e.g., that the caller is ensuring that the airways are as open as they can so that the patient is getting air the entire time; that the patient is lying in a recovery position; that the emergency response teams are on the way to the patient and in case the patient stops breathing it is important to do cardiopulmonary resuscitation and mouth to mouth resuscitation.

In Excerpt 8:13 about a hypoglycaemia[51] or insulin coma about a young man with significantly low glucose levels the nurse gives instructions about future, hypothetical conditions in a diabetes complication based on past nursing experience about how patients with diabetes can improve their conditions. In Extract 8:13, the nurse and caller share with their actions the goal orientation and task of caring for and improving the health state of the diabetes patient. The fragment displays an instruction-giving procedure in which the nurse uses recommendation questions, a conditional recommendation and a conditional directive when giving measure oriented instructions.

Extract 8:13 [Diabetes] (43A:3)

12 C Han är helt borta.
He is totally passed out.

13 Får du inte i- får du inte i honom socker?
Are you not able to give- are you not able to give him sugar?

14 C Nä.
No.

15N→Inga sockerbitar (.) eller?
No sugar cubes (.) or?

16 C Nä jag försöker men- men visst kan det dröja en halvtimme innan han vaknar?
No I try but- but sure it can take half an hour before he wakes up?

17N→Ja: alltså om han får insulinkänningar å du inte får i honom
Yes then if he gets hypo and you are not able to give him

18→socker så kan ta det nog ta längre tid (.) då måste man åka in
sugar so can take it probably take longer time (.) then one has to go in
sugar so it can probably take longer time (.) then you must go in

[51] Hypoglycaemia is defined as a condition of blood glucose which is too low and that requires assistance by outsiders in order for it to end (Östgren and Lindström 2012:173).

19 med honom.
with him.

20 C Jo men om det är[
Yes but if it is[

21 N→ [Har du fått har du fått i honom någonting innan?
[**Have you gotten have you gotten something in him before?**

22 C Ja det har jag fått.
Yes that have I done.
Yes I have.

23N→Det har du .hhja för det är klart att du kan avvakta lite grann
That have you yes because it is of course that you can wait a little bit
You have done that yes because of course you can wait

24 men det men det kommer an det beror på hur han mår om
but it but it depends it depends on how he feels if

25 han är kallsvettig .hh å han ser dålig ut?
he is in a cold sweat .hh and he looks bad.

26 C Ja det gör han- han är ju helt dyblöt.
Yes that does he- he is of course totally wet.

27 N Han är helt?
He is totally?

28 C Dyblöt.
Totally wet.

29 N Ja: ja:,
Yes yes,

In this extract we see acute instruction giving in response to a patient suffering from an insulin shock. The fact that the caller has called the emergency number and that the patient suffers an insulin shock entitles the nurse to take on an instruction-giver identity to instruct the caller to improve the medical state of the patient. The caller aligns to the instruction giving activity and call identities of instruction-giver and instruction-receiver. Early in the call, the nurse initiates the measure oriented instruction giving with a recommendation question (13) orienting to the inability of the patient to do the treatment procedure of eating sugar due to the insulin shock. With this instruction the nurse proposes a method for treating the patient to which the caller responds negatively (14). The nurse repeats the recommendation question. The query is negatively formulated including a specification of the treatment object

and a turn ending or (15) suggesting the inability of the patient to eat sugar because of his coma state. The caller answers negatively in the beginning of her turn and then informs the nurse that she has tried to initiate the treatment of the patient. The turn by the caller ends with an explanatory account and a suggestion question about the duration of the insulin coma (16). In return, the nurse responds conditionally about the longevity of the acute medical condition of the patient and gives the caller a provisional emergency plan of when to bring the patient to a healthcare facility for medical care (17-19).

The call continues by the caller starting to design her response as a conditional question (20). The nurse interrupts the caller by launching a recommendation question (21) using the vague descriptor "something". The caller frames her response positively (22) which is acknowledged by the nurse. In the same turn the nurse provides symptom conditional instructions and an account commentary to the caller regarding the longevity of when to take the patient to the healthcare facility (23-25). This is similar to the doctoring turns delivered by the physician in the previous fragments about the person with kidney problems. The caller gives a symptom description of the patient (26). The nurse is unable to hear what the caller has said and replies with an other-initiated repair using lexical components from the previous turn by the caller (27). The caller repeats the symptom of the patient (28) which the nurse recognises (29). In Extract 8:14, another variation of a measure oriented instruction in medical emergency calls which is displayed when the nurse instructs the caller through negated recommendation questions, a recommendation and a conditional recommendation.

Extract 8:14 [Diabetes] (43A:3)

42N→Så du får ingen kontakt med honom?
So you get no contact with him?
So you are not able to contact him?

43 C Nä.
No.

44N→Det får du inte?
That get you not?
You are not able?

45 C Han tittar å svarar när man säger [name] det gör han.
He looks and answers when one says [name] that he does.

46 N Det gör han?
That does he?
He does?

47 C Ja.
Yes.

48N→Ja men du får inte i honom lite mjölk å smörgås för då
Yes but you are not able to give him some milk and sandwich because then

49 det vore nästan bättre än bara fast eller ett par sockerbitar
it would be almost better than just solid or a pair of sugar cubes

50 om han kan tugga på det för då kommer det det snabbare igång va.
if he can chew on it because then it it works faster right.

51 C Ja.
Yes.

52 N Så att om sitter han upp eller ligger han?
So if is he sitting up or lying down?

53 C Ja nu har vi satt upp honom.
Yes now we have been sitting him up.

54N→Bra för sitter han upp å du kan ge ett par sockerbitar
Good because if he sits up and you can give a pair of sugar cubes

55 till att börja med så att han liksom kommer ifatt sej,
to begin with so that he recovers so to speak

56 C Ja.
Yes.

57N→Sen kan man ge men då ska man ta inte ta bara fast utan
Then one can give but then one should not just take solid but

58 ta ett glas mjölk å ett par smörgåsar å försöka se om han
take a glass of milk and a pair of sandwiches and try to see if he

59 kan äta lite grann.
can eat a little bit.

60 C Ja det är jättebra för nu börjar han prata igen.
Yes that is great because now he begins to speak again

The nurse continues the instruction giving about treatment measures by asking about the possibility to be in contact with the patient through a recommendation question formulated in the shape of a negative interrogative (42) which the caller responds to negatively (43). The nurse repeats the contact possibility status request with a negatively framed yes-no query (44). The caller replies by reporting on the status of the patient (45). The nurse then requests a verification (46) which the caller answers

to positively (47). In lines 48-50, the nurse enquires about the possibility for the caller to perform treatment procedures on the patient. The question is framed negatively in the shape of a recommendation question. Subsequently in the same turn the nurse evaluates alternative treatment measures and delivers a negated treatment recommendation question for the latter option (49) which is affirmed by the caller (51). With this recommendation question the nurse encourages the caller to be on watch to continue to observe the patient. The nurse then asks about the positioning of the patient (52).

The caller responds with an unmarked acknowledgement and an account of her measure (58). In response, the nurse praises the position of the patient, gives treatment instructions and launches a recovery plan (54-55) which is affirmed by the caller (56). The nurse elaborates on the treatment plan with a recommendation (57-59). The caller replies by informing the nurse that it is now possible to communicate with the patient again (60). In this excerpt, the nurse cares for the patient by giving the caller acute treatment instructions through negated recommendation questions, a recommendation and a conditional recommendation. The caller actively acknowledges, aligns to and follows the treatment instructions given by the nurse by describing the symptoms of the patient and her own treatment measures without exhibiting resistance.

Some signs of measure oriented instruction giving is its practical acute care orientation when call-takers provide instructions to callers about what to do in varying and more or less unpredictable disease progressions and future scenarios. Measure oriented instruction giving is based on the emergency severity, the needs, vital functions and stability of patients and the likelihood of an immediate life or organ threat. Call-takers are direct in measure oriented instructions by first asking control questions and then giving concrete and precise instructions based on the character of the emergency and can in this way steer the directions of the medical emergency calls. The shape of the measure oriented instructions have consequently both a retrospective and prospective character.

In the measure oriented instruction giving activity callers are expected to observe patients, receive and carry out immediate life-saving procedures relevant to the medical emergencies at hand. Call-takers and callers do not know each other before the calls. Call-takers do not know what types of life-saving competencies callers have and consequently ask callers what measures they can perform. As a routine call-takers make callers available to measure oriented instructions by calmly reassuring callers in the telephone contacts. The calm reassuring statements and tone of voice can make anxious callers more receptive to instructions thus creating an instruction adherence environment. In measure oriented instructions call-takers need callers to accomplish measures at the scene of the emergency which makes it less asymmetric in nature. It is the caller that has the access and knowledge of the current status of the patient and can perform measures on the patient before the arrival of the ambulance crew. In contrast, in acute flow maintaining instruction

giving activities callers are expected to only obey and comply with the social normative order of medical emergency calls making this type of instruction highly asymmetric in character.

Organisational response instructions to problems of callers

Organisational response instructions in medical emergency calls are about call-takers and callers that are able to make decisions and which have competing goals with emergency response efforts. Both call-takers and callers work towards helping patients in need but they may do it in different ways in medical emergency calls. Organisational response instruction giving may be about establishing the appropriate care giver. Call-takers and callers may engage in negotiations about the types of care that are appropriate for ongoing emergencies. Call-takers may also use varying methods to persuade patients to accept a certain type of pre-hospital acute care.

Instructing patients to receive ambulance care (4 of 51 cases).

One type of instruction giving is when the call-taker instructs the patient to accept ambulance service care but the patient wants another types of care. The following call is about a woman who has been brutally abused by her partner and wants a physician to come to her home while the nurse wants to send an ambulance to the woman. The different outlooks of the woman and the nurse become a crucial concern to respond to by the call-takerin a longer negotiation between the call participants. Domestic violence is a societal problem with nursing, medical, psychosocial, social work and legal dimensions that the participants demonstrate in this medical emergency call. In the call the nurse discovers that the woman is not sharing the assessment of what type of emergency response that is relevant in the situation. Instruction giving related to spousal abuse requires a sensibility for the abused person and the home context of this person. In this call the nurse decides to instruct the woman to go to the hospital by trying to influence the perception of the woman of what would be the right emergency response to her needs by explaining the advantages of hospital care.

Extract 8:15 [Domestic violence] (25B)

1 N Sos ala:rm.

2 C .hh ja hej.
.hh yes hello.

3 N Hej.
Hello.

4 C Skulle ja kunna få en ambulans?
May I have an ambulance?

5 N Ja vad är det som har hänt??
Yes what has happened?

6 C Det är eh min hustru,
It is eh my wife,

7 N Mm.

8 C Ja klippte till henne på näsa:n.
I hit her on the nose.

9 N Ja:ha.
Yes.

10 C Det är så att hon har näsblod.
It's so that she has nose blood.

11 N Jaha (1.0) >får ja prata med din hustru istället då<?
Yes (1.0) >may I speak to your wife instead then<?

12 C Ja du får gärna prata med henne.
Yes you may gladly talk to her.

13 N Tack.
Thank you.

14 (5.0)

15 C De vill prata med dej.
They want to talk to you.

16 (8.0)

17 P °>Hallå ja.°<
°>Hello yes. °<

18 N Hallå ja vad är det som har hänt?
Hello yes what has happened?

19 P °>Ja har blivit sönderslagen.°<
°>I have been totally beaten up.°<

20 N Va sa du?
What did you say?

21 P °>Ja har blivit sönderslagen.°<
°>**I have been totally beaten up.**°<

22 N Mm hur känner du dej just nu då:?
Mm how do you feel right now then?

23 P °>Ja det rinner ju fortfarande ur näsan .hh.°<
°>**Yes it is still running from the nose.**°<

24 N Det rinner ur näsan?
It runs from the nose?

25 P °>Ja har bara en lunga å den fick ja söndersparkad häromdan.°<
°>**I have only one lung and it was shattered the other day.**°<

26 N Jaha.
Yes.

27 P °>Få nån läkare.°<
°>**Get some physician.**°<

28 N Mm.

29 P °>Om ja fick en läkare att titta på mej.°<
°>**If I get a physician to look at me.**°<

30 N Mm.

31 P °>Det är inte säkert att sjukhuset- att det kommer en läkare å tittar på mej.°<=
°>**It is not sure that the hospital- that it comes a physician and looks at me.**°<

32 N =Hur gammal är du?
=How old are you?

33 P °> [Age].°<

34 N [Age].

35 N Ja han har tydligen slagit er förr den här mannen.
He has evidently beaten you before this man.

36 P °>~Ja.~°< (wobbly voice).
°>**~Yes.~**°<

37 N Har han gjort så att dina lungor är borta också eller?
Has he done so that your lungs are gone also or?

38 P °>Nä nä nä nä.°<
°>**No no no no.**°<

39 N Nä vad var det du sa då du att du bara har en lunga kvar?
No what was it you said then you that you only had a lung left?

40 P °>~Ja.°<~ (wobbly voice).
°>~**Yes.**°< ~

41 P °>Ja har svårt att andas (.) ja ligger på
°>**I have difficulty in breathing (.) I'm lying on**

42 köksgolvet.°<
kitchen floor.°<

43 N Ja kommer du inte ifrån köksgolvet nu eller?
Yes are you not able to get up from the kitchen floor now or?

44 P °>Nä ja har svårt.°<
°>**No I have difficulty.**°<

45 N Ja.
Yes.

46 P °>Ja har svårt att komma upp.°<
°>**I have difficulty in getting up.**°<

47 N Du har svårt att komma upp? Har du ont nånstans?
You have difficulty in getting up? Do you have pain anywhere?

48 P °>Ja (0.5) det har jag.°<
°>**Yes (0.5) I have.**°<

49 N Var har du ont nånstans?
Where does it hurt?

50 P °>Hela vänster sida°<
°>**The entire left side**°<

51 N Hela vänster sida.
The entire left side.

52 P °>det är bara blod som rinner ner hela tiden.°<
°>**it is just blood that's dripping down the entire time.**°<

53N→Hördudu vill du att ja- ja skickar fram en ambulans till dej?
You hear would you like that I- I send forward an ambulance to you?

54 P °>Nä.°<
°**>No.<**

55 N Varför inte då?
Why not?

56 P °>Nej får jag en läkare är det bra.°<
°>**No may I have a physician it is good.**°<

57 N En läkare?
A doctor?

58 P °>Ja.°<
°>**Yes.**°<

59N→ Du skulle behöva ses över hela du.
You would need to be looked over all of you.

60N→Kanske du kan få lugn å ro en stund också på sjukhuset.
Maybe you can get some peace and quiet also at the hospital.

61 P °>Ja nej det här är inte första gången.°<
°>**Yes no this isn't the first time.**°<

62N→Nä då kanske du kan få möjlighet att komma in på sjukhuset å få lite lugn å ro**.**
No then maybe you can have the possibility to ome to the hospital and get some peace and quiet.

63 P °>Ja lugn å ro.°<
°>**Yes peace and quiet.**°<

64N→Å kanske få vidare hjälp med det dina- med det hära.
And maybe get further help with your- with this.

65 P °>Ja har ju en liten hund.°<
°>**I have a little dog.**°<

66 N Ja.
Yes.

67 P °>Ja kan inte lämna honom för att-°<
°>**I can't leave him because-** °<

68 N Nä den här mannen bor han hos dej eller?
No this man does he live with you or?

69 P °>Ja.°<
°>**Yes.**°<

70 N Är ni tillsammans på nåt sätt? Är ni gifta eller?
Are you together in some way? Are you married or?

71 P °>Ja.°<
°>**Yes.**°<

72N→Ja kan inte han ta hand om hunden då?
Yes can't he take care of the dog then?

73 P °>Jo jo [men han är inte vid sina sinnes fulla bruk.°<
°>**Yes yes [but he's not in his right mind.**°<

In Extract 8:15 about the spousal abuse of the woman, the husband of the woman calls the emergency number and asks for an ambulance (4). The emergency problem materialises when the caller describes that he has hit his wife. The caller downplays the seriousness of the emergency problem by connecting the description about hitting his wife on the nose (8) and that she has a bleeding nose (10) leaving out the information that that one lung of the woman is not functioning due to an earlier beating a day before. Ambulance and nose blood are category contrasts and do not belong to the same membership categorization device which is a concept created by Sacks (1995). At that point the nurse asks to talk to the woman (11). When the nurse inquires about the emergency concerns the woman describes that she has been totally beaten up (19). When the nurse asks the woman about her emotional state (22) she informs that blood is running from her nose (23), that she only has one lung and that this lung had earlier been kicked until it broke (25). The woman requests a physician to be sent to her home (29). After finding out the age of the woman the nurse proposes that the man has physically abused the woman before by using a distance marker "this man" (35) presenting the woman as the credible party which the woman confirms crying (36). When the nurse suggests that her lungs are gone (37) the woman denies this (38). The nurse reminds the woman that she said that she only has one lung left (39) which the woman confirms with a wobbly voice (40).

The acute nature of the emergency warrants the nurse to give organisational response instructions to the abused woman about accepting ambulance assistance. When looking at the decision-making aspect of this interaction the call participants have different goal orientations and agendas. The nurse is oriented to sending an ambulance to the woman which would take her to the hospital and in that way be protected from future physical abuse by her husband. In contrast, the woman is oriented to obtaining a physician to her home who would assess and take care of her immediate needs but not protect her from the risk of being abused again in case the woman decides to stay in her home after acute care by the physician.

The nurse inquires about the lung capacity of the woman (39). The woman reports with a trembling voice that she is having trouble breathing and is located on the kitchen floor struggling to get up (41-42). The exchanges at lines 43-47 about the woman's difficulty of getting up and the bleeding symptom description at line 52 cause the organisational response recommendation that is delivered at line 53. Also the exchanges about the pain status of the woman (47-51) may function as a pre to the instruction at line 53. After the woman has located the pain and stated that

she is bleeding (52) it is relevant for the nurse to respond. Keep in mind that the woman has previously repeated the request to get a physician to be sent to her home. In this granting position in the call the nurse responds by initiating a question- which is aborted and continued with an organisational response recommendation offering ambulance assistance (53). The end of turn at line 53 is delivered as a factual informing about the ambulance decision but it is doing a recommendation because of the rising intonation in the end of the turn.

The woman turns down the ambulance offer with a non-congruent response (54) which is questioned by the nurse (55). The woman responds by requesting a physician (56) which is questioned by the nurse (57) and verified by the woman (58). The nurse instructs the woman that she would need a complete medical health check (59-60) which the woman confirms (61). The nurse suggests the opportteamy for the woman to rest at the hospital (62). The woman responds by acknowledging the importance of rest and safety (63).

The nurse suggests that the woman may get further help with her problem through hospitalisation (64). The woman withholds an answer to what the nurse said and initiates a new topic by replying with an explanation of her everyday reality informing the nurse that she has a small pet (65) which is verified by the nurse (66). The woman thus avoids the previous recommendation by the nurse which may be interpreted as a negotiation explanation for a physician to be sent to her. The pet account by the woman exhibits the relationship of being dependent on but not siding with the abuser. The woman begins an explanation of why she is not able to leave the abuser which is not completed by the woman. In response, the nurse asks about the living arrangements and the woman's relationship to the perpetrator (68, 70). The woman answers with affirmations (69, 71) which function as a pre to the measure oriented instruction (72). The measure oriented instruction is shaped as a yes-no question checking the reality of the caller. Here the nurse adjusts to the life conditions of the caller in order to give an adequate measure oriented instruction. The structure of this exchange between the nurse and woman may therefore be interpreted as groundwork before giving instruction including pre-questions that are pre-implicative. The nurse is here using recipient design in order to adjust her instruction to the life circumstances of the woman.

In this call the abused woman wants to take an active part in the planning and the accomplishment of her own pre-hospital care. The nurse displays understandings of the acute care needs, local circumstances and wishes of the woman and makes the final emergency response decision based on that. This type of response by the nurse solves the incompatibility between the dissimilar perspectives of the participants. The nurse was thus open to a different outcome of the medical emergency call that exhibits that the assistance plan of the nurse was not the only alternative in responding to the incident. The ambulance assistance decision is consequently firmly anchored in the reality of the abused woman. The instruction giving activity in this call involves negotiations between two parties with conflicting

perspectives of how to the respond to the emergency and a procedure for settling this divergence of outlooks. The woman has already in the beginning of the call made her decision of what type of acute care she wants. The nurse and the woman participate in the negotiation expressing their different viewpoints on what type of care that is necessary in this emergency. The nurse argues her views from an organisational response perspective. The woman argues her needs and circumstances based in her own everyday life world. Both participants keep on arguing their perspectives until the end of the call when the nurse gives in and grants a home visit by a care team despite the fact that the nurse has the final decision right because of the organisational response mandate of the emergency control centre.

Organisational responses to problems of callers include instructions, measures, ambulance grantings, ambulance rejections or proposals. The instruction giving activity in this call is about influencing the woman to accept an ambulance which emerge when the woman is not complying with the ambulance granting. When the woman rejects the ambulance granting the nurse delivers instructions. The granting of an ambulance is also a form of instruction including a normative aspect in that the nurse assesses that the woman needs an ambulance. Callers routinely receive grantings that ambulances will be sent to patients. In case callers reject ambulance grantings call-takers iniate instruction giving and persuasion activites. CA describes persuasion as a procedure to handle conversational disagreement within interactional contexts that naturally prefer agreement[52].

To specify the type of care resources (1 of 51 cases)

Another variation of organisational response instructions when a nurse recommends acute care is presented in Excerpt 8:16. In the beginning of this call the patient expresses breathing problems with immediate implications of acute care needs. The nurse recommends with an organisational response instruction suggesting that the patient goes to the hospital but then reformulates her organisational response instruction to recommend that an unspecified care team can make a home visit to the patient and bring oxygene in connection to this visit.

Extract 8:16 [Oxygen assistance] (7B)

5 N→Vill du inte åka in till sjukhus?
Don't you want to go into the hospital?

6 →Du vill att nån kommer hem med syrgas till dej?
Do you want someone to come home with oxygen to you?

[52] Conversation analytic references on persuasion are, for instance, Psathas (1995) and Wooffit (2005).

7 P Mm.
Mmhm.

In Excerpt 8:16 the nurse's negatively framed recommendation question (5) in the beginning of the call makes a response by the caller relevant. The organisational response instruction is given in the shape of a question with a preferred no. The caller is not given an opportunity to respond to the instruction because there is no lapse before the next organisational response instruction which the nurse delivers with a recommendation question (6). Consequently, the caller does not respond to the first recommendation question. The nurse positively framed recommendation question about an unspecified care team making a home visit to the patient specifies the type of care resources that the team would bring. The caller responds with an unmarked acknowledgement (7).

Organisational response directive when the caller indicates insecurity about what should be done (1 of 51 cases)

The final example of ways of giving an organisational response instruction is presented in Extract 8:17 in which the nurse gives an organisational response instruction using a directive to create a practical solution to and a shared understanding of the problem at hand. In the following call fragment, the patient has heart troubles and has previously had heart disease in the form of angina at several occasions. The patient states that she has commenced medical treatment in the form of taking nitroglycerin. In line 31, the caller initiates the instruction sequence by presenting her concerns of uncertainty about hospitalisation prompting an organisational response instruction by the nurse (32).

Extract 8:17 [Infarct of the heart] (30B)

26 C Nu är det nåt tryck över- nåt konstigt
Now it is some kind of pressure on- something strange

27 (.) som känns (.) på bröstet.
(.) **that is felt (.) on the chest.**

28 N Mm.

29 C [Andfådd]. Det har flyttat sej.=
[Out of breath]. It has moved.=

30 N =Ja.
=Yes.

31C→ Nu vet ja inte om ja ska åka in
Now I don't know if I'm gonna go there

32 eller om ja ska,
or if I'll

33N→Det ska du göra.
You are going to do that.

34 C Eller ta nåt mer?
Or take something more?

35N→Nä du får inte ta mer nitro inte.
No you can't take more nitro no.

36 C Ja det är bara tjugofem procents,
Yes it's only twenty-five per cent,

37N→Ja (1.0) du ska inte ta mer nitro
Yes (1.0) you must not take more nitro

38 absolut inte du har tagit så många
absolutely not you have taken so many

39 så sörru.
so you hear.

40 C Ja.
Yes.

Successive to the nurse inquiring about the symptom status of the patient that the patient leaves time, dose and symptom information on, the instruction sequence begins. At this point in the call the patient expresses uncertainty about if she should go into the hospital for further treatment or stay at home (31-32) and is thus actively searching for an instruction. The nurse replies with an organisational response instruction by directing the patient to go to the hospital (33). Next the patient asks if she should take more nitroglycerin (34). In the ensuing response position, the nurse discourages the patient to take additional nitroglycerin (35) with a measure oriented instruction using a strongly prohibiting directive. The nurse thus expects compliance by the caller. The patient downplays the dose level by using the lexical item of "only" placed immediately before that which is focused in this case the amount (36) where "only" expresses that twenty-five per cent is a small amount in the context. The nurse recognises what the patient has stated but again denies the patient the permission to take more nitroglycerin using another prohibiting directive with the reasoning that the dose taken earlier was too high (37-39), which is acknowledged and aligned to by the patient (40). The organisational response instruction given by the nurse in this fragment is delivered in a strongly normative format which can be explained by that the caller has been asking for instruction.

Organisational response instructions are located anywhere in medical emergency calls. This type of instruction giving is about making decisions about how the needs of the patients and callers ought to be met in regards to emergency response efforts or other types of acute care assistance. Call-takers have decision and interpretative prerogative in medical emergency calls and provides organisational response instructions based on institutional guidelines. Organisational response instructions are therefore not primarily a consensus focused activity but asymmetric in character. Although call-takers orient to understanding situations, expectations and needs of callers in organisational response instructions with the consequence that this type of instruction sequences may end in consensus between call-takers and callers.

In organisational response instructional sequences call-takers use both recommendation questions and directives. Call-takers explain what the best options are for callers by using explanations often shaped in argumentative forms with fact details. In organisational response instruction sequences callers routinely have other goals than those of the call-takers which results in negotiations with call-takers. From different goal orientations the participants negotiate to convince the other party that their option is the appropriate care decision. An asymmetry between participants are demonstrated in that call-takers have decision support in the medical index and emergency response resources of the emergency control centre. Callers argue based on their own or the patient's needs, convictions and their health and life situations. Organisational response instructions also encompass critical reasoning when call participants explore decision alternatives.

Summarising instruction giving

Summarising and the sequential positions of summarising formulations in institutional calls have previously been discussed in conversation analytic research (see for example Clayman 2009). Summarising instruction giving in medical emergency calls (5 of 57 cases) is routinely placed after the medical interview in the end of medical emergency calls together with decision informings about ambulance assistance whereupon medical emergency calls are ended. Summarising instructions are routinely positioned in the end of the call which is shown in Extract 8:18 about a drowning emergency.

Extract 8:18 [Drowning] (19A)

110 C Å det är nästan vid viken där.
And it is almost by the bay there.

111O→Då möter ni upp där så är de på väg.
Then you meet up there so they are on their way.

112 C Det är br[a.
That is good.

In Extract 8:19 it is time to end the call. The emergency call operator gives a directive about where to meet the ambulance crew and promises ambulance assistance. The caller responds with an assessment (112).

Summarising instruction giving is an action and task oriented activity. Call-takers sum up important actions, tasks and fact details to callers based on past experiences from similar emergency situations. This type of instruction giving is usually placed in the end of medical emergency calls together with the ambulance granting. The purpose with summarising instruction giving is to increase opportteamies for callers to plan and initiate actions and know what to do, how measures should be performed and by whom. Summarising instructions prepare callers with well explained accounts of realistic expectations of what will happened when the ambulance is coming. This activity includes points about what is important to think about at the time of the ambulance arrival in order to avoid or reduce any misunderstandings in emergency situations. The summarising reflection form can, for instance, be about facilitating for the ambulance crew by requesting callers to meet them when they arrive at the scene of the emergency and keep the door to the house or apartment building open. Summarising instructions are delivered as directives and recommendations about what callers should do. The relationship between call-takers and callers in summarising instruction sequences is characterised of consensus and is often related to conveying hope to callers.

Discussion

Instruction giving in medical emergency calls is distinctive in relation to instruction giving in other forms of interaction by being brief, rushed, call-taker steered and and goal oriented because of the acute character of patient symptoms and events. In the analysis, I have discussed call positions of instruction giving, what types of medical problems instructions are about, what components instructions have and what instructions account for. I have also examined if there are any connections between instructional actions and the local situations in the emergencies.

The findings demonstrate that call-takers transfer instructions as a direct response to descriptions by callers about emergency events and acute symptoms and conditions of patients. Instructions are often provided in the beginning and the end of medical emergency calls. More specific places instructions occur in medical emergency calls are characterised by when it is time to end medical emergency calls,

situations in medical emergency calls when callers express insecurity with their words and voices of what they should do next, when callers state that they lack abilities to handle emergency events or explicitly articulate that they need instructing, after call-takers have collected details about disease histories and current symptoms of patients and when risks are present in the emergency situations. Other aspects where instruction giving occur are when callers express that they cannot hear or understand what call-takers are saying.

Instructions are given when call-takers have assessed accounts that have been provided by callers. Instructional sequences exhibit that nurses give clear and short instructions after that callers have accounted for conditions and symptoms of patients in the beginning or in the interview phase of medical emergency calls. Physicians give instructions in the interview phase and in the end of medical emergency calls after callers have answered a series of questions about the disease histories of patients. The reason for physicians not delivering instructions in the beginning of medical emergency calls is that nurses and emergency call operators are the call-takergroups that answer and begin medical emergency calls. In case there is a need for physician specific instructions nurses and emergency call operators transfer calls to physicians. Another pattern connected to specific professional groups is that physicians and nurses are taking the roles as medical emergency educators to a larger extent than emergency call operators. Emergency call operators often provide instructions after callers have described emergency events and patient symptoms in the end of medical emergency calls. They also have to be more careful in giving medical and nursing instructions because of limitations in their education. Consequently, they usually finish the interview phase of the calls and deliver instructions based on the medical index of the emergency control centre.

Asymmetry is a crucial aspect of instruction giving. Power and asymmetry are important dimensions in instruction giving in medical emergency calls has been explored. What we see in this chapter is a result of the asymmetry. When callers dial the emergency call number callers they enter a joint project. In certain aspects callers submit to call-takers the decision rights of the call-takers. The instruction thus get a special shape. At the same time callers have the hands and eyes at the emergency site. This analysis has demonstrated that power asymmetries and hierarchical differences are exhibited in instruction giving practices of medical emergency calls. They are related to, for instance, the participants' interactional and institutional knowledge, task and competence asymmetries, and asymmetries of participation as emergency management experts or novices. Callers in medical emergency calls routinely expect instruction providers to give life-saving instructions about acute measures in relation to various needs and concerns of callers. Call-takers have comprehensive responsibilities in medical emergency calls based on their rights and capacities. The rights of callers are more restricted. They are usually expected to report about patient symptoms and emergency events and follow instructions given by call-takers. The capacities of callers may be more or less advanced in saving lives

or improving health states of patients depending on their knowledge about and abilities in carrying out basic first aid and emergency response measures.

Asymmetries between call participants are initiated immediately in the calls as a consequence of the dependency relationship between callers and call-takers. Call-takers have knowledge and competence advantages in formal medicine and nursing education and call-taker experience in handling emergency situations, risk analysis, giving symptom and event-related instructions based on subject knowledge, knowledge about the emergency organisation and its way of responding to emergencies and that they through their call-taker roles dispose over different types of emergency response resources. Decision competencies and responsibilities are asymmetric in the medical emergency call context that make callers dependent on the expertise of call-takers. Call-takers assess symptoms and conditions of patients and make decisions about measures in medical emergencies based on presentations of concerns of the callers. Asymmetries are demonstrated in that call-takers lead instruction giving activities by defining what is an ambulance warranting problem and choosing what should be followed up based on standardised emergency routines. Call-takers therefore control the contents of instruction giving sequences in medical emergency calls.

The dependency relationship between call-takers and callers in medical emergency calls exhibit that both call participants need the abilities of the other party in order to successfully assist patients in medical emergencies. Both call-takers and callers interact from inferior positions needing the participation of the other party; however, they are involved in different ways. While past literature mainly have been focused on investigating one way asymmetry in institutional interaction instruction giving in Swedish medical emergency calls is about a two way or double oriented asymmetry. Callers are dependent on the expertise of call-takers and call-takers are at the same time are dependent on callers to, for instance, collect details about patient symptoms and emergency events and perform emergency response measures on patients. In the context of medical emergency calls when waiting for ambulance services, callers are encouraged by call-takers to be active partners by observing patients, updating call-takers about what is going on and using lifesaving competences in performing measures on patients.

When comparing call-takers and callers, the knowledge and emergency response skills of physicians, nurses and emergency call operators are incomparably much deeper and most of all more experience anchored than knowledge and skills of callers. Call-takers are responsible for patients in medical emergencies. Callers do not have any patient responsibility. If we look at the asymmetries from the point of view of callers then callers have direct knowledge of and access to ongoing emergencies when they respond to questions and instructions delivered by call-takers. Callers have more or less knowledge about current symptoms and conditions, past illness history and life circumstances of patients. Callers can at the same time be vulnerable and afraid because emergencies may be about life and death issues of

persons. Many times they are about persons that they have close relationships to. Emergency events for callers are usually new situations. In contrast, instruction giving in medical emergency calls is a routine activity for call-takers. The participants have for that reason different outlooks in this type of institutional activity.

Types of instruction giving in medical emergency calls

The empirical analysis of this chapter presents four main formats of instruction giving procedures in medical emergency calls: (1) acute flow maintaining instruction giving; (2) measure oriented instruction giving; (3) organisational response instructions to problems of callers and (4) summarising instruction giving. Emergency call-takers use the medical index and acute flow maintaining instructions to direct callers to adhere to the social normative order of medical emergency calls in case they challenge it or do any other actions that may risk the emergency call order. Acute flow maintaining instruction giving is a compliance procedure in which call-takers make total strangers comply with the social normative order of medical emergency calls by requiring assistance of callers. Callers are expected to aid the emergency response authorities and therefore submit to call-takers who have expertise over emergency response procedures. Callers have usually limited emergency response options. Relinquishing their free will and going with the emergency call order is part of the process for callers. So when call-takers direct callers with emergency measures to perform on acutely ill and injured patients callers routinely comply with the procedure. At any time in medical emergency calls when call-takers in authority tell citizen callers what to do they usually follow the instructions.

Call-takers face varying practical problems in medical emergency calls including maintaining telephone contact with callers or when callers do not respond to questions or act in accordance with instructions call-takers give. Acute flow maintaining instruction giving responds to these types of emergency call problems. Emergency situations in which acute flow maintaining instruction giving occurs are therefore when callers demonstrate non-compliance to the social normative order of medical emergency calls. Implications of this social normative order are that call-takers should act as emergency response professionals and that callers should respond as responsible call participants by, for instance, staying on the telephone line, listening, being calm and complying by responding to questions and instructions delivered by call-takers. When call-takers assess that the social normative order of medical emergency calls has been broken or is at risk they direct callers back to the social order and instruct them what to do next in the ongoing emergency events.

The aim with acute flow maintaining instruction giving is thus to help and educate callers to be responsive to and handle the variety of relevancies and contexts in emergencies. Acute flow maintaining instruction giving may be viewed as a procedure to keep callers as telephone contacts until ambulance services arrive to patients. Call-takers act and make decisions as educators of medical emergency call practices in regards to what callers should do next in the emergency processes. Acute flow maintaining instruction giving is not about symptoms or medical conditions of patients. Instead it focuses on the emergency response contexts and the normative social order of medical emergency calls. By giving acute flow maintaining instructions, call-takers help callers to position themselves in relation to emergencies. This type of instruction giving consequently provides callers with specific emergency response orientations that enable them to better align to the contextual requirements of emergencies. For call-takers acute flow maintaining instruction giving is a method by which they can operate efficiently within medical emergency calls.

With acute flow maintaining instruction giving call participants make emergency response action plans and set goals in relation to the circumstances of each specific emergency event. Acute flow maintaining instruction giving is about call-takers directing callers to respond to the requirements of ongoing emergencies and in that way act as responsible callers. This type of instruction giving effort may prevent deterioration of patients and allow better assessment materials for call-takers and emergency staff members when they respond to emergencies. All of the above facets of acute flow maintaining instruction giving are about what it takes to achieve this institutional activity of medical emergency calls.

Call-takers use a variety of methods to design acute flow maintaining instructions as coercive requests, recommendation questions or as single imperatives or an imperative followed by another. Acute flow maintaining instruction giving is mainly direct in character, and predominantly short and straightforward instructions about how callers should act. The tone of acute flow maintaining instruction giving may be interpreted as strict, authoritarian and imposing. Acute flow maintaining instruction giving contributes to the identity construction of the participants framing them as experts and laymen which is an outcome in keeping with the aims of the medical emergency call. The mainly direct and coercive acute flow maintaining instructions enable call-takers to encourage and force callers to follow instructions.

Reviewing responses by callers to acute flow maintaining instructions reveals that callers usually accept this type of instruction giving. Callers may also question the reasons for acute flow maintaining instructions by asking for explanations. Acute flow maintaining instruction giving is principally positioned in the end of medical emergency calls. It is a side activity that stands alone in relation to the main activities of medical emergency calls and is placed as small islands of interaction

and sequential insertion sequences within the interview activity of medical emergency calls.

Research about acute flow maintaining instruction giving in medical emergency calls has not been pursued previously in the field of institutional interaction. These findings thus contribute with new knowledge about this interactive phenomenon. Acute flow maintaining instruction giving is an essential call-takerskill in conducting medical emergency calls. The findings can provide an insight into the procedures of acute flow instruction giving which call-takers can use in their professional emergency response operations. Future research of acute flow maintaining instruction giving may further examine mechanisms and pathways through which this type of interactive phenomena is achieved.

Measure oriented instruction giving is about performing measures, collecting details about emergencies and preparing callers to perform measures in relation to future, hypothetical conditions of patients. Measure oriented instruction giving occurs in medical emergency call situations when call-takers assess that they need callers to perform measures or prepare to carry out measures on patients. It is based on the emergency severity, stability of the patients' needs, vital functions and the likelihood of an immediate life or organ threat. Call-takers are direct in measure oriented instructions by asking control questions and giving precise instructions based on the character of the emergency. They can in this way steer the directions of medical emergency calls. Call-takers provide future, hypothetical measure oriented instructions to callers in the format "in case these symptoms are identified then perform these acute measures". Callers then set themselves in a preparedness mode to perform emergency appropriate measures. Call-takers also test treatment measure competencies of callers in order for callers to be able to respond to current and potential conditions of persons. Callers routinely respond with compliance to measure oriented instructions and act on measure instructions delivered by call-takers.

Organisational response instructions come about when callers do not share the emergency call goals with call-takers with the implication that call-takers engage in negotiations with callers. From different goal orientations call participants negotiate to convince the other party that the option they argue for is the appropriate care decision. Organisational response instructions are about making decisions about how needs of patients and callers should be met regarding emergency response efforts or other types of acute pre-hospital care assistance. Call-takers have a decision and interpretative prerogative in medical emergency calls and deliver organisational response instructions built on institutional guidelines. Organisational response instructions are therefore not primarily a consensus focused activity. In this type of instruction giving call-takers explain what the best alternatives are for callers using explanations often in argumentative forms combined with fact information. Organisational response instructions to problems of callers is

distinguished from other types of instruction giving by being focused on emergency response decisions regarding what type of care is relevant for patients.

In summarising instruction giving, call-takers recapitulate vital actions, tasks and fact details to callers grounded in earlier experiences from comparably similar emergency events. Call-takers do this so callers will be prepared for the ambulance arrival and be aware of crucial emergency response aspects. This type of instruction giving is usually located in the end of medical emergency calls in connection to emergency response decision. Summarising instruction giving is similar to measure oriented instructions in regards to carrying out measures on patients. When comparing summarising instruction giving in medical emergency calls to other types of institutional interaction new aspects are the acute medical care and measure orientations of call participants.

What stimulates call-takers to give instructions in certain positions in medical emergency calls and why do they give instructions? When comparing the four main types of instruction giving in medical emergency calls in regards to positioning of instructions some observations can be made. Summarising instruction giving is distinguished from other types of instruction giving by recurrently being placed in the end of medical emergency calls. An exception is the measure oriented instruction giving with future, hypothetical measure oriented instructions which is also routinely located in the end of medical emergency calls as a method to prepare callers to encounter possible upcoming, acute situations. Acute flow maintaining instruction giving, measure oriented instruction giving (focused on collecting details about emergencies and performing measures on patients) and organisational response instructions may be positioned anywhere in medical emergency calls except in the end of the calls.

Instruction giving in medical emergency calls

The instruction giving practice is a central part of medical emergency calls that usually do not build on previous relationships. It is more about short-term goal oriented contacts between persons that do not know each compared to more long-term relationships between, for instance, a psychologist and a client. Callers in medical emergencies may be patients and immediate and extended family members, close friends, acquaintances and non-relatives of patients. Caller needs for expert instructions emerge in complex crisis situations in which callers have certain or lack knowledge and skills of what to do when responding to emergency events and acute symptoms of persons. Callers can after receiving reassurances and instructions from call-takers begin to perform laymen achievable measures on patients until the ambulance services arrive. Other persons available next to patients in emergencies can also carry out measures on patients. Emergency response efforts are thus a team

effort including one or more call-takers, the caller and bystanders on the scene of the emergency event.

The findings from this analysis suggest that call-takers solicit caller participation to work towards the joint goal orientation of saving lives of and improving conditions of patients. Call-takers do this by instructions to callers to take co-responsibility for performing measures on patients and to be personally accountable when doing this. In this way call-takers and callers set up social structures to enable acute care procedures. By keeping callers on the telephone call-takers deliver instructions to callers to survey, inform about and treat patients. Callers routinely follow instructions given by call-takers. In reference to callers being expected to be actively involved in and comply with instructions it is beneficial for instruction providers to acknowledge callers as significant information and layman first aid-givers. The analysis demonstrates that measures callers accomplish on their own and from instructions by call-takers can play an important role in the survival and recovery of patients.

Call-takers and callers participate in the surveillance of patients and analyse current patient conditions. Qualifications of callers are routinely acknowledged and supported by call-takers. Call-takers follow-up on abilities that callers have described earlier in medical emergency calls with the aim to set callers in action preparedness modes to perform measures. A decisive issue in medical emergency calls is related to performing or not performing a particular measure. Instruction activities are consequently about callers informing call-takers about emergencies, call-takers giving concrete instructions to callers and callers taking responsibility to carry out measures in relation to specific patient symptoms and emergency situations. Measure planning includes details about what will or may happen, who will perform measures and how measures should be carried out. Regularly it takes several attempts to encourage callers to execute measures. Acute measures are achieved to prevent deaths of patients or to improve patient conditions.

9 Concluding discussion

This dissertation is a conversation analytic study of social interaction in medical emergency calls to the Swedish emergency call number 112. Callers talk to emergency call operators, nurses and physicians about people with acute illness or injury. The aim of the thesis is to analyse recurring practices of interaction by which emergency call-takers and callers accomplish medical emergency calls. Central practices in medical emergency calls selected to be analysed were: (1) questioning, (2) emotion management, (3) risk management and (4) instruction giving. The investigation is based on audio recordings of medical emergency calls collected in ethnographic fieldwork in a Swedish emergency control centre. The study also explain the management of medical emergency call operations based on ethnographic data including field notes from observing call-takers, call-takers' manuals and unstructured interviews with emergency control centre professionals.

Summary of results

The first chapter describes the context of the study. Callers dial the emergency number when they or other people have acute medical problems. They talk to emergency call-takers that examine the nature of the problems and decide upon measures to be carried out. Callers describe their problems often consisting of ambulance requests. To assess patients' symptoms call-takers interview callers with questions about whether patients are awake, conscious, breathing and if there is any serious bleeding or chest pain. Additional questions concern patients' medical history, details of injuries and how it happened. Emergency medical dispatchers co-listen to medical emergency calls and dispatch ambulance teams to patients. When callers answer questions call-takers also give callers first aid instructions while the ambulance teams are on their way to patients. Emergency call operators can connect nurses or physicians to co-listen to calls or take over the questioning of callers. Emergency medical dispatchers send out ambulance teams to incident scenes.

The second chapter provides a presentation of the theoretical perspective and is an overview of CA. It presents CA in relation to the ethnomethodology of Garfinkel, the interaction order perspective of Goffman and the phenomenology of Schütz. I also discuss institutional interaction, past research on emergency call

interaction, and earlier research about the four interactive practices chosen for the empirical analysis in this study.

Chapter three gives a presentation of the research methods chosen for this study and empirical data. It introduces the conversation analytic methods focusing on the use of audio recordings of medical emergency calls, interaction data and the sequential analysis of interactive practices. Additionally, the chapter discusses ethnographic methods including observations, observational field-notes and interviews. Empirical data consists of 82 of audio recorded medical emergency calls from ethnographic fieldwork in an emergency control centre. I also observed and interviewed call-takers.

Chapter four discusses the context of medical emergency calls. The medical emergency call process includes: (1) The caller making the telephone call to the emergency number 112 which initiates the medical emergency call process. (2) The call-taker asking what has happened and the caller presenting the problem and/or requesting help. (3) The call-taker talking the caller through emergency events. By following the medical index of the emergency control centre the call-taker questions the caller taking essential details about the nature of the problem, the patient's conditions, the exact location and whether the casualty is conscious and breathing normally. (4) The call-taker identifying if the problem presentation warrants ambulance assistance. Already at this point the call-taker may connect the emergency medical dispatcher for co-listening of the call in order to dispatch ambulance teams during the call. (5) The emergency medical dispatcher listening in to calls, assessing the emergency details that call-takers have collected, prioritising needs of patients and making rapid decisions about which ambulance teams to send to patients at emergency sites. (6) The ambulance team cares for and transports the patient to the hospital emergency department. (7) The emergency medical dispatcher and the ambulance team carry out an emergency event evaluation focused on the ambulance assistance performance and outcomes.

The analysis also discuss the multitude of listeners to and systematic surveillance of call participants in medical emergency call operations. The description of the ethnographic fieldwork shows that medical emergency calls as a form of talk are designed for an overhearing audience in the form of emergency medical dispatchers overseeing medical emergency call operations, co-listening to medical emergency calls and sending out ambulance teams during the calls. Emergency call-takers and emergency medical dispatchers can respond collectively to ongoing medical emergencies by being connected through their computers with the medical index, maps and other technological resources. The chapter also provides a discussion of the specific professional identities, responsibilities and institutional frameworks of the emergency control centre, the Swedish emergency response organisation SOS Alarm and ambulance services. The primary practices for the ambulance team at the emergency site is to provide treatment and care of

patients and save life in cooperation with other emergency services including the police and fire services.

The empirical analyses of aspects of medical emergency calls in chapters five through eight have provided an essential insight into the wide range of practices in medical emergency call management. Common features in the empirical chapters are that they share a focus on how call participants collaboratively achieve and orient to institutionally framed interaction orders and tasks in medical emergency calls including the request for medical assistance and response sequence. Ambulance teams do basic procedures and care for patients at incident scenes and in transports to hospital emergency departments. Ambulance crews include an ambulance nurse and an ambulance technician.

Questioning in medical emergency calls

Chapter 5 describes and analyses questioning in medical emergency calls. It demonstrates in particular how health-related questions can be provided and responded to in different social contexts. Call-takers ask questions to clarify what is happening, and to manage the symptoms of the patients to help keep them safe until the ambulance crews arrive. They pass the collected information from the questioning on to ambulance teams so that they know what to do when they arrive at emergency scenes. The health-related questions and responses encompass consistent details of patients' current diseases, past medical problems, medications and treatments. Call-takers refer to the questioning phase in medical emergency calls as the medical interview.

The emergency control centre steers what questions call-takers ask callers in medical emergency calls grounded in the boxes on the computers. These questions are based in the criteria constructed question index The Swedish Index for Emergency Medical Alarm Reception. The index supports call-takers in their assessments in the medical interview. In the medical interview of emergency calls the call-taker questions the caller to collect relevant details about emergency events and medical conditions of the patient. The call-taker routinely follows an overall process order in the medical emergency call asking standard questions in the index. First, the starting point of the questioning is when the call-taker asks the caller what has happened. Second, the call-taker ensures the exact position of the patient or the accident. Third, the call-taker inquires about if the patient is awake and can respond and if the breathing of the patient is affected. When the call-taker has received a confirmation from the caller that the patient is awake and is breathing normally the call-taker ask about what the problem is and if it is relevant when the problem started and how old the patient is.

In the questioning practice in medical emergency calls it is the emergency call-takers who ask the questions and the callers who answer them. The emergency call-

taker questions impose restrictions on responses. The caller response opportunities are thus considerably controlled in medical emergency calls. The response formats by the caller in this medical emergency call displays an asymmetric relationship between the emergency call-takers and the callers.

The analysis also demonstrates resistance as an interactional resource. Resistance methods are employed by callers. For instance, a caller can actively resists call-taker questions through an explicit non-understanding about why the emergency call operator continues to ask questions, disaligning, pleading, expressing high level of anxiety, hyperventilating, talking fast and loud and using a pejorative term when addressing the emergency call operator. The medical emergency call is here an arena of resistance work by the caller, where questioning participation is actively negotiated and where the caller and emergency call operator display divergent orientations and opposing identities.

Call-takers clarify and define problems by questioning in medical emergency calls. Callers describe acute disease symptoms and events that caused problems for persons. Call-takers listen carefully to (sometimes traumatised and shocked) callers and ask institutional standard questions and situation specific questions based in local emergency contexts in order to survey and specify problems and acute situations. Reviewing patients' symptoms, problems and acute events in the medical emergency call context through questioning has a decisive importance in order to handle acute conditions of patients and provide relevant details to ambulance services.

When clarifying problems call-takers start from the descriptions by callers. Even if callers describe problems in a precise way call-takers do not know what types of diagnoses patients have. In one group of medical emergency calls patients have earlier institutionally made diagnoses that call-takers can relate to in the questioning. Also ambulance services cannot know what types of diagnoses patients have when they arrive at emergency sites. In those cases when it is possible ambulance services assess and treat patients on the scenes of incidents.

Here is proposed a distinction between questioning about defined and undefined problems in medical emergency calls. An example of questioning about a defined problem in medical emergency calls is a patient with diabetes having acute complications. Diabetes is a category in the medical index. In one of the medical emergency calls in my data the caller presents the diagnosis and unconsciousness of the patient. This diabetic patient is in a coma which is a life-threatening diabetes complication that causes unconsciousness. The problem presentation including the diagnosis and unconsciousness of the patient is provided in the beginning of the call. As a consequence, the call-taker only asks location identifying questions related to the patient without asking questions about the medical condition of the patient. The call-taker then promises that an ambulance will be sent to the patient.

This is a typical call structure in medical emergency calls in which callers have described diagnoses and acute medical conditions in the beginning of calls. In

questioning about defined problems call-takers usually have an orientation towards past institutional decisions after callers having presented one of the established diagnoses of medical care that can be found in the medical index. When callers present a diagnosis in the beginning of an emergency call call-takers use primarily closed-ended questions based in the medical index to steer the calls. The closed-ended question is employed to speedily receive specific information or to clarify emergency situations. The most important function of closed-ended questions is to confirm or dismiss information. Subject matters in the questioning after a presented diagnosis or medical condition in medical emergency calls are consciousness, breathing, bleeding and pain. Callers usually respond to questioning after a presented diagnosis or medical conditions with yes- and no-answers or short descriptions.

According to the medical index call-takers should collect a number of facts when problems of patients are undefined. The questions are then about the general condition of the patient, if the patient has a known disease, if the patient uses medication on a regular basis and if the patient have been hospitalised or gone through surgery. The questioning is also about symptoms and signs, i.e., when symptoms started, pain, fever and if the patient fainted. The medical index instructs call-takers to ask about the vital functions consciousness, breathing and circulation when incidents are about undefined problems. In that way they are able to assess the consciousness level and breathing of patients. In case general questions in the medical index about undefined problems exhibit that vital functions are affected then that should be viewed as signs of serious or life-threatening disease or injury. If problems are clarified during medical emergency calls call-takers are instructed by the medical index to go to the relevant information in the index about the specific medical condition, for instance, allergy or diabetes.

Patterns in questioning about undefined problems in medical emergency calls include: (1) questioning about unexplained medical conditions placed after vague problem descriptions; (2) call-takers to a larger extent (compared to questioning after callers present diagnosis and medical conditions) asking yes-no-questions based in the local circumstances of the emergency; (3) call-takers asking additional questions about when and where the incident occurred and about the nature of the problem when callers provide limited information about problems; (4) question themes of clarifying problems, symptoms, preparations before the arrival of ambulance teams and creating action plans; and (5) callers responding both with short and extended answers in questioning about unexplained medical conditions.

The yes-no question format is the dominant question design in medical emergency calls. The action types, extending from requesting information to seeking agreement with an assessment, a considerable majority of all questions asked were yes-no questions. Yes-no questions were usually responded to by callers with either a yes or no followed by a description. Call-takers' open-ended questions invite callers to report about emergencies in a less restricted way. Alternative

questions are asked about different options, for instance, a permanent condition or recently initiated symptoms of patients, normal or different breathing, named medications or other medications and a named medication and another named medication. Call-takers used alternative questions and open-ended questions to a minimum.

The questioning and answering series is placed within the beginning and the ending parts of an adjacency pair sequence. The questioning activity in medical emergency calls is accomplished as an insertion sequence around the first pair part (request for help/problem description) and the second pair part of a base adjacency pair (its reply). The ambulance assistance request and/or problem description executes a commencing action, a first pair part which executes receptive actions, second pair parts in the shape of an approval of or denial of ambulance assistance. The sequential arrangement of the request and its reply maintains the notion that the adjacency pair framework is the basis to the social organisation of social action in medical emergency calls.

Nurses' questioning elicits details about emergencies, patients' personal information, conditions, medications and other emergency related issues. Physicians' questioning is mainly focused on patients' conditions. Acute care-related questions are of vital importance in being constructed to target the past medical history compilation procedure in Swedish medical emergency calls functioning as a diagnostic support material. The past medical history-taking practices in medical emergency calls and in pre-hospital care may be life saving for patients with acute medical conditions. They may also be decisive for ensuring patient safety in the direct assessments and treatments of the on-telephone care interaction in medical emergency calls, the ambulance service care of the patient and in the transportation of patients to hospital emergency departments. The past medical history gathering in medical emergency calls is also significant for physicians and other staff members of acute medical teams in hospitals caring for, observing, urgently medically assessing, conversing and making clinical decisions about, diagnosing, treating and handling an extensive variety of acute medical conditions. The final part of chapter 5 investigates how physicians, nurses, callers and patients deal with patient medications in medical emergency calls. It explores the sequential structure of how the parties commence and accomplish the medication review which is part of the past medical history collection procedure.

Managing emotions in medical emergency calls

Chapter six investigates emotion management which is a fundamental activity, interactional resource and vehicle in achieving institutional tasks in medical emergency calls. An overall strategy of call-takers in medical emergency calls is to perform a number of emotion management practices simultaneously. Call-takers and callers handle emotions under intensily stressful conditions of crises and emergencies characterized by uncertainty, time pressure and situation complexity. The results reveal four key types of emotion management procedures: (1) call-takers keep themselves calm and manage callers' social display of emotions; (2) grant ambulance assistance; (3) provide problem solving presentations including emergency response measures to concerns of callers, and (4) emphasise the positive to create hope for callers.

Emotion management practices of maintaining a calm state and avoiding going up into callers' social display of emotions are performed by call-takers throughout medical emergency calls even when callers may have strong affective demonstrations such as crying and screaming. Medical assistance promises are routinely positioned in the end of medical emergency calls. Problem solving presentations are placed in the questioning phase and in the end of medical emergency calls. Engaging callers through future, hypothetical measure oriented problem solving is habitually located in the end of medical emergency calls as a method to prepare callers to encounter and respond to possible upcoming, acute situations. Positive messages to create hope for callers are usually positioned in the end of medical emergency calls and also occasionally in the questioning phase. With these emotion management practices call-takers stay calm, reassure callers with positive messages, solve problems and make decisions about how concerns and needs of patients and callers should be met regarding medical assistance and emergency response efforts.

When analysing emotion management practices in medical emergency calls, I have examined what comes before initiating emotion management. The findings demonstrate that call-takers manage callers' emotions as direct responses to callers' social display of emotions, for instance, when a call-taker promises ambulance assistance instead of responding with frustration to a caller's frustrated protest to the suggested choice of hospital destination by the call-taker. More specific places that cause emotion management interaction in medical emergency calls are characterised by situations when callers express anxiety and insecurity with their words and voices of what they should do next, when callers state that they lack abilities to handle emergency events or explicitly articulate that they need assistance.

When comparing emotion management methods in medical emergency calls the findings demonstrate differences in levels of interactional asymmetry of participation between call-takers and callers. Asymmetries of tasks include that call-

takers calm callers to engage them in responding to emergencies. Knowledge-based asymmetries are expressed in dissimilar epistemic domains between call-takers and callers in that professional call-takers have a decision and interpretative prerogative in medical emergency calls and perform emotion management practices based on emergency response organisational expertise, norms and guidelines.

The basic emotion management strategy of using a calm tone of voice is less restrictive. Other emotion management techniques as emergency response decisions and problem solving are restricted in relation to guidelines of the emergency control centre preventing or reducing callers from doing what they want to do based on the institutional calming mandate of the emergency organisation. By engaging callers in the emergency response work call-takers ask callers to perform measures on patients or prepare for the arrival of ambulance crews when both call-takers and callers share the strong commitment to save lives of patients. Asymmetries between call-takers and callers are minimised when they cooperate as a call-takerand caller team to assist patients in a shared emergency response operation.

Call-takers need three main capacities to perform emotion management in medical emergency calls: (1) self-control to stay calm and focus on what patients and/or callers account for; (2) interactive skills in empathetically reassuring, calming and positively motivating callers; and (3) emotional awareness and critical reflection skills in analysing and understanding contacts between call-takers and callers and the decision process that from professional emergency response knowledge choose relevant emotion management methods in varying emergencies. The emotional awareness and moral responsibility of call-takers precedes emotion identification and management efforts, and decision making decisions about emergencies and crises. Other important dimensions of emotion management in medical emergency calls are the guiding principles of establishing credibility and mutual trust between call-takers and callers.

Different types of feelings have the potential to create challenges, problems and concerns for call-takers and callers in emergency response operations. Anger and anxiety can be two social displays of emotions by callers that may obstruct call-takers when conducting the medical interview. The emergency control centre has plans and practices to manage callers' social display of emotions. Anger may threaten emergency call norms and lead to a conflict between the call-taker and caller. However, anger is rare in the medical emergency call data corpus of this study. Caller anxiety, on the other hand, is encountered by call-takers as a routine part of medical emergency calls. Anxious callers are upset, nervous, distracted, and uncomfortable. Callers are for that reason not always able to hear or remember what call-takers say. The anxiety may interfere with the medical interview. Anxious callers may need reassurances about what can be expected about the emergency response which may decrease caller confusion in the heat of the moment making medical interviewing more efficient. In response to crisis situations, call-takers routinely restore callers' confidence in believing in their abilities to handle

emergency events. Callers may feel lost, confused, worried and can thus experience difficulties in taking in what is going on and describing events when acting in emotion. Call-takers usually respond sensitively to callers' emotions by recipient designing their emotion management in response to callers' social display of emotions. By orienting to see emergency events from the eyes of callers call-takers use their emergency response expertise when performing emotion management in medical emergency calls.

Emotion management through calming practices will usually lead to a decrease in callers' anxiety. Anxious callers will generally benefit from extra emphasis on supportive calming statements by call-takers. Callers describe different emergency situations which might frighten them. When callers become worried and agitated it will usually make circumstances worse. As a response call-takers maintain their professional emotional neutrality, stay calm and reassure callers that they have the emergency response operations under control. The results suggest that emotion management methods used by call-takers keep callers as information sources and active participants in managing emergencies. Call-takers' emotion management practices are supported by the institutional mandate with operational implications of what call-takers are required to do according to the protocols of the emergency organisation.

In the majority of the emotion management interaction in medical emergency calls, call-takers make callers available to information and instructions by calmly reassuring and guiding callers through the varying phases of emergencies to make decisions about handling patients' acute conditions and potential risks that may arise in emergency situations. The calm reassuring statements and gentle tone of voice that call-takers express can make anxious callers more present in the moment and receptive to calming practices thus creating trust contacts between the call participants. These calming practices in medical emergency calls are based on emergency management expertise of call-takers, and on institutional requirements, guidelines and routines of the emergency control centre. Call-takers are routinely able to stay calm and collected and organise their conduct so that the calls are moving towards overall goals of the medical emergency call of making an informed ambulance assistance decision and preparing for the arrival of the ambulance crew. These overall goals are not emotionally steered but driven by the emergency control centre and the societal mandate of the emergency control centre to respond to medical emergencies in cooperation with the ambulance services.

Emotion management in medical emergency calls is part of the standardized emergency response and preparedness operation in Swedish society. The activity of emotion management in medical emergency calls is shaped by patient symptoms and emergency events and also by the emergency response requirements of society and the emergency organisation. Emotion management by call-takers is a response to emergency call contexts which create unique social realities for each emergency. Call-takers manage callers' emotions as reactions to the varying local circumstances

of medical emergency calls. Emotion management interaction in medical emergency calls is distinctive in relation to emotion management practices in other forms of interaction by being acute, brief and goal oriented because of the emergency character of patient symptoms and events.

The interactive phenomenon of emotion management practices in medical emergency calls may change in the coming years. The rapid globalization, migration due to wars, disasters, starvation, totalitarian regimes, terror attacks and the transformation of Swedish society including innovative social technologies and the ageing population of Swedish society may create new requirements for emergency control centre resources and call-taker competences to handle the complexities of emotion management practices in medical emergencies. A possible consequence would be an even higher demand for advanced emotion management capabilities of call-takers and emotion management routines in medical emergency calls.

Call-takers may need to improve their emotion management knowledge and skills in relation to mainly two groups of callers where comprehension and hearing problems are frequent in medical emergency calls. The first group is elderly persons and the second is non-native callers. Non-native callers may experience linguistic barriers and cultural differences when talking to call-takers at the emergency control centre which may create risks that call participants do not understand each other in ambulance emergencies. Emotion management interaction in medical emergency calls is a complex work task for call-takers. They will continue to experience increasing demands, both demographically and societally driven by an ageing population with vulnerable elderly including patients with symptoms and conditions such as Alzheimer's or dementia, and disabled patients who rely upon reassurances and support for their care in emergencies.

Managing risk in medical emergency calls

Risk management in medical emergency calls involves identifying what can go wrong and taking steps for prevention, or organising a plan of action if risks should emerge. The conversation analytic and ethnographic understanding of managing risk in medical emergency calls in this dissertation exhibits a new sociological approach to risk different from the past abstract and macro-historical perspective of risk and the "risk society" in sociology (Beck 1992 and Giddens 1999) and medical discourse analytical studies on risk talk patterns (e.g., Linell et al. 2002). My perspective is not linguistically focused as many of the past discourse analytical studies on risk, not bio-medically focused on individualised risk or macro analytical focused on large-scale risk structures as in the risk studies by Beck and Giddens. I have a microsociological focus on risk interaction in medical emergency calls. Instead of talking on an abstract level emphasising that the reality of life today across the global risk society create risk, in large part, by society (e.g. Beck and

Giddens) I demonstrate how these risk activities are achieved by call participants in medical emergency calls.

Within the frameworks of conversation analysis and ethnography I examine risk management in medical emergency calls as an interactive and organisational phenomenon. At a general level, risk management is a central part of managing medical calls. Risk is fundamental to the structuring of the emergency control centre. Risk is handled through the arrangement of risk management practices, technology and relationships of the inter-professional emergency response team members with different kinds of expertise. Call-takers anticipate risk in acute medical emergencies, and detect possibilities of events occurring and implications of risk events. Harmful impacts in risk events in medical emergency calls include injuries and death to humans. In the complex risk management practice of medical emergency call management hazard, vulnerability, capacity and negative consequence discovery and surveillance are intricately bound up together. Managing risk in medical emergency calls is a call-taker driven and future vulnerability and health security oriented activity performed by call-takers and callers for targeted interventions in acute medical emergencies to provide health protection for persons. Call-takers routinely engage callers and local people to respond to threats that patients face and in actions aimed at reducing risks of injury, fatality and damage.

The setting and the professional activities of the emergency control centre pervade risk management. In this context of medical emergency calls I define risk as a time- and space-bound situation of uncertainty characterised by the seriousness and probability of negative outcome. Risk is a consequence of human actions and medical, technical or environmental events. A risk may be affected by actions or if the situation in which a risk has arisen change or by humans reducing the implication of the risk. Risk management in medical emergency calls are professional interactive practices performed by emergency call-takers and callers, and institutional procedures of the emergency control centre. Risk in medical emergency calls is concerned with two major risk types: (1) Risk that has already materialised such as a stroke and (2) risk of progression such as the risk of dying or not receiving treatment and/or medication. Having considered what major risk types are available the analysis looked at how risk is managed in medical emergency calls.

The chapter has provided seven fundamental interactive risk management practices performed by emergency call-takers on behalf of the emergency control centre. The first is risk listening through active listening after actual and possible risks. The second is risk questioning. The third is risk identification which is primarily focused upon risk information gathering. The fourth is risk monitoring. The fifth is risk assessment. The sixth is making decisions about elicited risk. The seventh is risk reduction which is about risk removal or risk reduction to satisfactory levels of risk.

Risk listening is initiated by the emergency call-taker who actively listens after risk that routinely is related to acute life danger or security. The practice of risk listening materialised in the ethnographic interviews with call-takers compared to being spoken interaction practices in medical emergency calls as the other six risk management practices. Risk listening is important in medical emergency calls because of the telephone interaction character of this phenomenon. The emergency control centre protocol encourages call-takers to be consciously present and risk prepared that anything can happen in medical emergency situations. Emergency call-takers carry out risk identifying and risk monitoring questioning based on the medical index and past risk management experiences. By asking problem-oriented questions about current risks in the moment call-takers create risk overviews, risk response actions and risk prioritisation plans.

Risk events or issues in medical emergency calls are identified in mainly three ways: (1) callers describe risk-based medical problems that immediately demonstrate risk; (2) callers talk about other issues that implicate emergency related risk, for instance, describing a person being situated next to a railway track and (3) emergency call-takers carry out risk identifying questioning that callers respond to. In the risk identification and risk detail search call-takers identify, collect and order risk particulars to make risk management decisions later in the calls.

The overall activity of monitoring a patient at risk consists of the emergency call handler's continuous monitoring of: (1) the patient's condition, including vital signs to see subtle changes in symptoms and conditions of the patient if they are deteriorating or have improved, and (2) the overall emergency situation. Risk monitoring in this organisational context means that the call-taker collects risk details about the emergency incident and monitors identified risks through telephone monitoring. Call-takers monitor symptoms and conditions of patients with a focus on thresholds for measures and decisions.

Risk assessment in medical emergency calls includes the critical reflection process of ordering and analysing risk details. The first step in the risk assessment procedure is risk specification. When callers describe patient symptoms, conditions and emergency circumstances call-takers make in-depth risk assessments in the process of collecting risk data details relevant to the possibility of harming persons, including the regular assessment of the patient's age, breathing, altered level of consciousness, acute pain including severe emotional pain, physical symptoms, extent of injury and social environment of the patient and bystanders at risk. The second step in the risk assessment procedure is the measure possibility reflection about what can be done in relation to identified risks.

Risk assessment types in medical emergency calls include: (1) risk assessments performed by the call handler; and (2) co-assessments of risk performed collaboratively by the call-taker and caller. The risk assessment by the call-taker comprises medical history taking, questioning the caller about the current condition of the patient, an evaluation of the emergency situation and triage assessment

prioritising risks according to the urgency of the patient's condition or danger details in the emergency circumstances. The professional task and practice of performing risk assessments in medical emergency calls includes a problem analysis to assess the patient for changes in condition, character and acuity of the problem, the patient's physical, psychological and sociological statuses and a risk scenario analysis to calculate where main dangers, obstacles and risks lie, the degree of danger and the risk management options being considered.

The risk-based decision-making process in medical emergency calls is a conscious practice resulting in deciding a course of action from varying options that relate to immediate health and safety risks. Risk decision making in this institutional setting also includes the systems and process of the organisation, comprising the medical index that supports call-taker assessment and decision making to assist patients and society. Features of the risk reduction practice in medical emergency calls include: (1) directly performing risk minimisation actions to increase patient safety and minimise situational hazards; (2) using the risk compliance arrangement in the medical index and local policies of the emergency control centre to ensure that risk management regulations are adhered to; and (3) monitoring risk events and making certain that callers or persons on the scene of the emergency carry out risk reduction measures in accordance with the medical index or the professional risk management experiences of call-takers.

Medical emergency calls presented in my data are specific in that callers are routinely active call participants in identifying and managing risks. Key elements of the ethnography of risk management in medical emergency calls include: (1) emergency risk and action preparedness which has been set up by the organisation in order to be ready to act; (2) acute medical and mental health emergency risks; (3) the immediate action character of risk identification in emergency calls; (4) acute telephone communication; (5) the problem presentation based risk identification practice; (6) life at risk and death issues here and now which is usually not the case in the presented risk contexts in other types of instutional interaction; (7) professional and layman task-centred risk identification; (8) active callers because when call participants in medical calls for help have discovered potential risks callers are regularly urged to take action based on instructions by call-takers to prevent injuries, fatalities and risk of damage and minimize severe consequences of events and (9) future and proactive risk identification. These features are important because they provide us with some insights in understanding the processes that are in operation.

Risk management in medical emergency calls encompasses micro systems and processes of the emergency control centre environment that support interactive practices such as risk identification, assessment and decision-making undertaken by call-takers and callers to handle current or possible risks in order to evade or minimize any detrimental outcome they may have. The procedure is dependent on,

for instance, current symptoms and medical conditions of patients, individual call-takers, organisational contexts and the set of circumstances of each emergency.

When comparing risk practices and contexts in past medical discourse analytical studies to risk procedures and circumstances demonstrated in the medical emergency call interaction data of this dissertation some observations can be made. A similar pattern in all of these risk contexts is that they concern communication about future risk. A difference from past medical discourse analytic studies on risk is that this study of risk management in medical calls for help in my perspective is not only an interactive but also a professional call-taker and an organisational process because of the risk management mandate of the emergency control centre.

In past medical discourse analytic research on risk the expert has informed clients about risk in mainly face to face interaction contexts with an active expert and a passive patient in regards to long-term risks. Medical emergency calls presented in this thesis are particular in that they are emergency call-taker led interactive practices with routinely active callers that manage risks together with call-takers. When call-takers and callers have discovered actual and potential risks callers are regularly urged to take action based on instructions on illness and injury prevention and specific patient care by call-takers or their own initiatives to prevent injuries, fatalities and risk of damage and minimize severe consequences of events. Caller (patient, relative or bystander) involvement when managing risk in medical emergency calls is thus a repeated practice in this activity.

At the organisational level, the risk management strategies, structure and institutional culture of the emergency control centre regulate emergency call-takers in what they can do by a systematic approach to risk management limited to health and safety including the risk of illness, injuries and accidents. The emergency control centre restricts who can call the emergency number, how technology can affect the emergency response process and what solutions call-takers are given via the medical index and organisational checklists and policies to manage risk in medical emergencies. The call participants have at the same time free will to handle risk in individualised ways.

Call-takers orient to the computerized decision support and expert system of the medical index that may aid the making of a particular risk-related decision. They also use other institutional guidelines and communication systems, organisational demands and procedures for ensuring accountability. The structure of the emergency control centre may thus shape interactional patterns of risk management practices including decision making and organisational and interactional asymmetries between call participants as risk experts and laymen.

The emergency control centre has a restricted area of societal responsibility being a risk management organisation that handles risks in medical emergencies. From an organisational perspective call-takers only accept described acute problems. Risks are subject to definition and interpretation by emergency control centre decision makers. Emergency call-takers are cognitively oriented to

classifying potential dangers by using organisational support in standard procedures, knowledge structures, type-specific risk categorisation and schemes of the medical index about different types of medical emergencies that orders risk details in ways that enable interpretation and leads to risk response action that is built on past medical emergency response experience. When responding to risk in medical emergencies call-takers also cooperate with professionals in other organisations. The societal responsibility of handling risk in medical emergencies is later in the emergency response process shared or handed over in inter-institutional collaboration routinely to ambulance services and sometimes also to the police.

Risk management practices in medical emergency calls may be viewed as systematic products and functions of the emergency control centre. Risk is central to the internal structuring of this institution in its mandate to identify and manage acute risks in medical emergencies to individuals and wider society. With this formal societal risk responsibility the emergency control centre has created risk steering and risk monitoring procedures and principles. They include audio recording medical emergency calls, standardised risk management task technology and check lists. The emergency control centre possesses a risk classification system in the medical index. The index provides a structured system to assess and manage a limited number of risks, and power and legitimacy to care for and make decisions about acutely ill persons that need to be transported to the hospital emergency department for further medical care. Emergency call-takers are expected to identify, position, move patients to secure locations, protect, care for, calm, assess, make decisions about and transport patients using risk management expertise, professional distance and authority in cooperation with callers and ambulance services.

A new risk monitoring dimension of the global information society is that risk in medical emergencies is also monitored by callers and passive bystanders at the emergency site that may use smart phones to photograph or film incidents. Images from the ongoing risk events can immediately spread globally via social media with possible ethical, legal and financial consequences for patients, ambulance services, call-takers and the emergency response organisation. A dimension of this phenomenon is the accountability to society that a societal member has when she or he actively is filming an emergency incident without helping the patients in dire need. What societal consequences and challenges will this have if this phenomenon increases the coming years? Is it morally justifiable to only record incidents without doing everything in their power to save the lives of other people?

Managing risks in medical emergency calls involve complex tasks for call-takers, other emergency response professionals and callers. Call-takers will continue to experience increasing demands, both demographically and societally driven by an ageing population with vulnerable elderly including patients with symptoms and conditions such as Alzheimer's or dementia, persons with mental health conditions

and disabled patients who rely upon risk management for their care in medical emergencies.

New challenges in risk management in medical emergency calls are related to calls about risk incidents at refugee shelters. Threats and violent incidents at refugee shelters have been reported. In the beginning of 2016 a woman was stabbed to death at a refugee shelter for unaccompanied children in Sweden. She worked at the shelter and died of her injuries after being injured in a reported knife fight. The refugee centre housed around a dozen asylum seekers aged between 15 and 19[53]. Arson attacks, threats and hate crimes against refugees are on the rise in Sweden[54]. When being in the emergency control centre and listening to medical emergency calls with and about asylum seekers in the autumn of 2015 I heard many calls that comprised communication and language difficulties, and misunderstandings between call-takers due to patients and callers' lack of basic knowledge of the Swedish language and lack of interpreters. With the examples of risk management it seems obvious that such research remains as important today as ever.

Instruction giving in medical emergency calls

Instruction giving in medical emergency calls is a straightforward activity. This is the first study to comprehensively examine the interactive phenomenon of instruction giving in Swedish medical emergency calls. I have decided to use the term instruction giving instead of advice-giving when referring to the directives and recommendations call-takers provide in medical emergency calls. Directives and recommendations in medical emergency calls are associated with acutely ill and injured patients and emergency situations. Instructions in this interactive context are steering, direct, concrete and forceful than advice in other types of institutional interaction and indicates the authority and emergency leader role of the call-taker. Instruction giving sequences in medical emergency calls are made up of emergency problem targeted and task oriented instructions of how "do this and do that" to get a desired result in an accelerated way.

Both instruction giving and advice-giving are about telling someone how to do something but advice means that it is up to the recipient to decide if she or he wants to do what is advised. Instructions are in themselves advice and call-takers are able to view listed general advice in the medical index on the computer. This is advice that may be used as an emergency response resource to different medical conditions of patients. The general advice in the medical index is then recipient designed and detailed by call-takers as practical instructions to on-scene callers of how to respond

[53] http://www.theguardian.com/world/2016/jan/26/worker-stabbed-to-death-at-swedish-refugee-centre 27th January 2016

[54] http://www.dn.se/nyheter/sverige/43-brander-men-fa-gripna-for-attackerna/ 27th January 2016

to specific incidents. The acute medical care context of the medical emergency calls routinely requires callers to do what is instructed by call-takers.

The analysis reveals social structures for instruction giving practices in medical emergency calls that make it different to instruction giving in other types of institutional interaction. Giving instructions in medical emergency calls is a critical expertise of call-takers. Instruction giving by call-takers are supported by the institutional mandate with operational implications of what call-takers are required to do according to the protocols of the emergency control centre. Callers have direct knowledge about emergency events and symptoms of patients and can thus perform measures on the sites of emergencies before the arrival of ambulance services. These dimensions have implications for the levels of asymmetry between call-takers and callers in the diverse types of instruction giving procedures in medical emergency calls.

The findings demonstrate that call-takers give instructions as direct responses to descriptions by callers about acute symptoms of patients and emergency events. More specific places that cause instruction giving in medical emergency calls are characterised by when it is time to end medical emergency calls, situations in medical emergency calls when callers express insecurity with their words and voices of what they should do next, when callers state that they lack abilities to handle emergency events or explicitly articulate that they need instructions, after that call-takers have collected information about disease history and current symptoms of patients and when risks are present in the emergency situations. Instruction giving is often provided in the beginning of medical emergency calls when patients have acute symptoms and conditions. Other aspects that cause instruction giving is when callers express that they cannot hear or understand what call-takers are saying.

The analysis exhibits that nurses usually give instructions after that callers have accounted for conditions and symptoms of patients in the beginning or in the interview phase of medical emergency calls. Physicians deliver instructions in the interview phase and in the end of medical emergency calls after callers have answered a series of questions about disease histories of patients. The reason for physicians routinely not giving instructions in the beginning of medical emergency calls is that nurses and emergency call operators are the call-taker groups that answer and begin medical emergency calls. In case there is a need for physician specific instructions nurses and emergency call operators transfer calls to physicians. Another pattern connected to professional group memberships is that physicians and nurses are taking the role of medical emergency educators to a larger extent than emergency call operators. Emergency call operators often provide instructions after callers have described patient symptoms and emergency events in the end of medical emergency calls. They also have to be more cautious in giving instructions because of limitations in their education. Consequently, they usually finish the interview phase of the calls and then deliver instructions based on the medical index of the emergency control centre.

The empirical analysis of this chapter presents four formats of instruction giving in medical emergency calls: (1) acute flow maintaining instruction giving; (2) measure oriented instruction giving; (3) organisational response instructions to problems of callers and (4) summarising instruction giving. These types of instruction giving practices are here summarised and compared. Emergency call-takers use the medical index and acute flow maintaining instruction giving to rapidly direct callers to adhere to the social normative order of medical emergency calls in case they are procedurally out of line, challenge it or do any other actions that may risk the emergency call order. Acute flow maintaining instruction giving is a compliance procedure in which call-takers make total strangers act in accordance with the social normative order of medical emergency calls by requiring acute assistance of callers. Callers are expected to assist the emergency response authorities and therefore submit to call-takers who have expertise over emergency response procedures. Callers have limited emergency response options. Relinquishing their free will and going with the emergency call order is part of the process for callers. When call-takers on the phone direct callers with emergency measures to perform on acutely ill and injured patients callers routinely comply with the procedure.

Call-takers face varying practical problems in medical emergency calls, for instance, maintaining the telephone contact with callers or when callers do not respond to questions or act in accordance with instructions call-takers give. Acute flow maintaining instructions are responses to these types of emergency call problems. Emergency situations in which acute flow maintaining instruction giving occurs are when callers demonstrate non-compliance to the social normative order of medical emergency calls. Implications of the social normative order of medical emergency calls are that call-takers should act as emergency response professionals and that callers should respond as responsible participants of medical emergency calls by, for example, staying on the telephone line, listening, being calm and comply by responding to questions and instructions by call-takers. When call-takers assess that the social normative order of medical emergency calls has been broken or is at risk they direct callers back to the social order and instruct them what to do next in the ongoing emergency events.

Acute flow maintaining instruction giving is a problem-solving practice in emergency situations and an interactional resource for call-takers to sustain the engagement of callers and direct them how to respond to emergencies. Call-takers act and make decisions as instructors of medical emergency calls in regard to what callers should do next in emergency processes. Acute flow maintaining instruction giving is not about symptoms or medical conditions of patients. It is focused on the emergency response contexts and the normative social order of emergency calls. Acute flow maintaining instruction giving consequently provides callers with specific emergency response orientations that enable them to align to contextual requirements of emergencies.

With acute flow maintaining instruction giving call-takers set up emergency response action plans and goals in relation to the circumstances of each specific emergency event. Acute flow maintaining instruction giving in medical emergency calls is about call-takers directing callers to respond to the requirements of ongoing emergencies and in that way act as responsible callers. This type of instruction giving effort may prevent deterioration of patients and allow better assessment materials for call-takers when they respond to emergencies. All of the above facets of acute flow maintaining instruction giving are about what it takes to achieve the institutional activity of medical emergency calls.

Call-takers use a variety of methods to design acute flow maintaining instructions as coercive requests, recommendation questions or as single directives or a directive followed by another. Acute flow maintaining instruction giving is mainly direct in character, short and use straightforward imperatives to instruct callers what to do in acute situations. The tone of acute flow maintaining instruction giving may be interpreted as strict, authoritarian and imposing. It contributes to the identity construction of call participants framing them as experts and laymen which is an outcome in keeping with the aims of the medical emergency call. Callers routinely participate in and allow this activity in order to respond rapidly to medical emergencies. Reviewing responses by callers to acute flow maintaining instructions reveal that callers usually accept this type of instruction giving. Callers may also question reasons for acute flow maintaining instructions by asking for explanations. Acute flow maintaining instruction giving is principally positioned in the end of medical emergency calls. It is a side activity that stands alone in relation to the main activities of medical emergency calls and is placed as small islands of interaction and sequential insertion sequences within the interview activity of medical emergency calls.

Measure oriented instruction giving is about performing measures during medical emergency calls. In this type of instruction giving call-takers instruct callers to perform measures, collect information about emergencies and prepare callers to carry out measures in relation to future and hypothetical conditions of patients. Measure oriented instruction giving occurs in emergency call situations when call-takers assess that they need callers to perform measures or prepare to carry out measures on patients. It is based on the emergency severity, stability of the patients' needs, vital functions and the likelihood of an immediate life or organ threat. Call-takers are direct in measure oriented instructions by first asking control questions and then giving precise instructions based on the character of the emergency and can in this way steer the directions of emergency calls. Call-takers provide future, hypothetical measure oriented instructions to callers in the format "in case these symptoms are identified then perform these acute measures".

As a result callers set themselves in a preparedness mode to perform first aid and other emergency response measures. Call-takers also test first aid competencies of callers to prepare them to respond to current and potential conditions of persons.

Callers usually respond with compliance to measure oriented instruction giving and act on measure instructions delivered by call-takers. The results stress the importance for family members and witnesses of medical emergencies to immediately initiate and participate in first aid procedures such as putting the patient in a recovery position, initiate heart compressions, mouth to mouth resuscitation, cardiopulmonary resuscitation, etc. on patients while waiting for ambulance services in order to save lives or improve medical conditions of patients.

Organisational response instructions occur when callers have other goals with medical emergency call activities than call-takers with the implication that call-takers engage in negotiations with callers. From different goal orientations call participants then negotiate to convince the other party that the option that they argue for is the appropriate emergency response decision. Organisational response instructions are about making decisions about how needs of patients and callers should be met regarding emergency response efforts or other types of acute pre-hospital care assistance. Call-takers have a decision and interpretative prerogative in medical emergency calls and deliver organisational response instructions built on institutional guidelines and instructions. Organisational response instructions are therefore not primarily a consensus focused activity. In this type of instruction giving call-takers explain what the best alternatives are for callers using explanations often in argumentative forms combined with fact presentations. Organisational response instructions to caller problems are distinguished from other types of instruction giving by being focused on emergency response decisions regarding what type of care is relevant for patients.

In summarising instruction giving placed in the end of medical emergency calls call-takers recapitulate vital actions, tasks and fact details to callers grounded in earlier experiences from comparable emergency events in order for callers to be prepared for the arrival of ambulance services and be aware of crucial emergency response aspects. This type of instruction giving is habitually located in the end of medical emergency calls together with the ambulance decision. Summarising instruction giving is similar to measure oriented instruction giving because of the focus on carrying out treatment measures on patients. Comparing summarising instruction giving in medical emergency calls to other types of institutional interaction distinct aspects are the acute medical care and measure orientations of the call participants.

When comparing the four types of instruction giving the findings demonstrate differencies in levels of interactional asymmetry of participation between call-takers and callers. Asymmetries of tasks include questioning and instruction giving carried out by call-takers in order to aid patients and callers and accounts and measure performances provided by callers. Knowledge-based asymmetries are expressed in dissimilar epistemic domains between call-takers and callers. The instruction giving type with the highest level of asymmetry is acute flow maintaining instruction giving in which call-takers give straightforward instructions demanding callers to

comply with the normative social order of medical emergency calls when callers are procedurally out of line. The second most asymmetric instruction giving type is organisational response instruction giving in which call-takers make decisions based on the institutional mandate of the emergency organisation. This type includes a possibility for call-takers to take into account the concerns of callers with the implication that call-takers may agree with the proposals delivered by callers. The most consensus oriented type of instruction giving is the summarising instruction giving. Measure oriented instruction giving is both consensus and double assymetric in character since the epistemic asymmetry of callers having direct knowledge about and epistemic authority of the conditions of patients. Call-takers more or less acknowledge the epistemic authority of callers regarding emergency events and patient conditions. In measure oriented instruction giving call-takers need callers to give them direct information about emergency events and current symptoms of patients and carry out measures on patients which means that mutual cooperation is central in this type of instruction. In summarising instruction giving call-takers also need callers to perform measures on patients or prepare for the arrival of ambulance services when both call participants share the strong commitment to save the lives of patients. Asymmetries between call-takers and callers are minimised when they cooperate to assist patients.

When comparing the four types of instruction giving in medical emergency calls in regards to positioning some observations can be made. Summarising instruction giving is distinguished from other types of instruction giving by recurrently being placed in the end of emergency calls. Exceptions are future, hypothetical measure oriented instructions which are also located in the end of medical emergency calls as a method to prepare callers to encounter possible upcoming, acute situations. Acute flow maintaining instruction giving, measure oriented instruction giving (focused on collecting information about emergencies and performing measures on patients) and organisational response instructions may be positioned anywhere in emergency calls except in the end of the calls.

The instruction giving practice is a central part of medical emergency calls that usually do not build on previous relationships between call-takers and callers. They are fast and short-term goal oriented contacts between persons that do not know each other compared to long-term educational relationships between, for instance, a psychologist and a client. Callers in medical emergencies may be patients and immediate and extended family members, close friends, acquaintances and non-relatives of patients. Callers' needs for expert instructions emerge in complex crisis situations in which callers have certain or lack knowledge and skills of what to do when responding to emergency events and acute symptoms of persons. They can before or after receiving reassurances and instructions from call-takers begin to perform laymen achievable measures on patients until the ambulance services arrive. Emergency response efforts are often a team effort including one or more call-takers, the caller and bystanders on the scene of the emergency event.

The findings from this analysis suggest that call-takers instruct callers to take co-responsibility for carrying out first aid measures on patients and to be personally accountable when responding to emergencies. Call-takers and callers set up social structures in this way to enable acute care procedures on the telephone. By keeping callers on the telephone line call-takers give instructions to callers to survey, inform about and treat patients. Callers routinely follow instructions given by call-takers. In reference to callers being expected to be actively involved in and comply with emergency call instructions it is beneficial for instruction providers to acknowledge callers as significant information and layman first aid-providers. The analysis demonstrates that measures callers accomplish on their own and after instructions given by call-takers can play an important role in the survival and recovery of patients.

On-telephone emergency response practices oriented to and achieved by family members of the patient includes forwarding the current condition of the patient to and from the other participants via replication of information, family members as caregivers during on-telephone first aid delivery, giving the caller first aid protocol demonstrating steps in first aid and joint treatment-orientation, preparing for cardiopulmonary resuscitation and mouth to mouth resuscitation in case the patient stops breathing, and evaluation of treatment measures with the use of questions in the form of suggestions. The on-telephone first aid analysis shows that the caller and third parties such as the spouse of the patient can facilitate treatment actively, by placing the patient in recover position and preparing to perform mouth to mouth resuscitation and cardiopulmonary resuscitation. The results demonstrate that informal family members (and bystanders) and formal emergency service caregivers are working together in emergency response operations. Technical and caring procedures are carried out by ambulance services but until the point of when the ambulance crew arrives, family members (and bystanders) can examine and carry out first aid measures on patients. In some medical emergency calls, I observe patient involvement when patients themselves act upon their own initiatives, for instance, to open the door for the ambulance crew, and after instructions by call-takers to make patients' situations better or prepare for the arrival of the ambulance crew.

Instruction giving in medical emergency calls is characteristically about performing first aid measures in immediately life-threatening and extraordinary circumstances of patients. In instruction giving practices of medical emergency calls call-takers and callers manage emergency events and acute medical conditions of patients. It contains knowledge about symptoms, signs, conditions and life situations of patients and instructions about how measures should be prepared and performed in order to reduce the effects of acute disease complications of persons. The basic shape or trajectory of instruction giving construction in Swedish medical emergency calls is getting instruction giving practices achieved in a three-turn or an extended instructional sequence organisation: (1) initiation of an instructional sequence by

call-takeror caller; (2) transfer instruction(s) by call-taker that routinely builds on information given in the emergency account by the caller, and (3) sequential uptake to the instruction: Acceptance or rejection of the instruction by the caller after the instruction receiver has assessed the instruction. This instruction giving structure may be interpreted as a shared emergency problem solving activity carried out by cooperating call-takers and callers in medical emergency calls.

Instructing sequences in medical emergency calls are mainly initiated by emergency call-takers. Instructions are given by call-takers after they have heard reports by callers about patient symptoms and emergency events. Call-takers respond to emergency descriptions by delivering emergency control centre protocol instructions and recipient designed instructions by orienting to understandings, concerns, needs and frames of reference of callers. In the emergency call data corpus I identified three formats of instruction deliveries used by call-takers: (1) recommendation, (2) directive and (3) explanation.

In distinguishing between the different groups of instruction giving call-takers some observations can be made. Similarities between physicians, nurses and emergency call operators are that they are all task- and caller-centred when giving instructions and when performing the institutional work of the emergency control centre. Instructions by physicians are patient symptom focused using mainly recommendation questions and measure oriented utilising conditional recommendations. Nurses deliver primarily nursing care instructions about measures callers can perform to help patients in emergencies using mainly negatively and positively framed recommendation questions. Emergency call operators give instructions about emergency response procedures using predominantly positively framed recommendations and straightforward directives. They must according to emergency control centre requirements connect calls to nurses and physicians when more complex medical and nursing care instructions becomes relevant.

In order to handle the complexities of contemporary society individuals and groups solicit instructions from experts and expert organisations. The emergency control centre is a service organisation providing instructions and emergency response services in medical emergency calls. The normative social order of instruction giving interaction in medical emergency calls is oriented to by call-takers and callers in a public societal context. It is characterized by facets such as instruction giving by coercion focused on ensuring caller compliance to this emergency call order and instruction giving by consensus concerned with close collaborations between call-takers and callers. Instruction giving by coercion is about steering callers to adhere to the normative social order of medical emergency calls here and now.

The instruction giving activity in medical emergency calls is part of the standardized emergency response and preparedness operation in Swedish society, and shaped by patient symptoms, emergency events and the emergency response

requirements of society and the emergency organisation. Call-takers' instructions are responses to emergency call contexts which create unique social realities for each medical emergency. Call-takers and callers form these emergency realities as reactions to varying local circumstances of medical emergency calls.

Instruction giving in medical emergency calls tend to change in the coming years. Call-takers may need to improve their instruction skills in relation to mainly two groups of callers where comprehension and hearing problems are frequent in medical emergency calls. The first group is elderly persons and the second is non-native callers. Non-native callers may experience linguistic barriers and cultural differences when talking to call-takers at the emergency control centre which may create risks that the participants do not understand each other in acute situations. When co-listening to medical emergency calls in the emergency control centre in 2015 many refugee patients expressed psychosocial problems including anxiety and fears. At the same time they did not know any Swedish and were using interpretors in the calls. An interpretor is not always available which may cause non-comprehension or misunderstanding between call participants.

Elderly persons face a risk for experiencing acute conditions including heart infarcts, strokes and falling accidents in their homes. Landline phone society is over and we have experienced a change in Swedish society to the usage of cellular phones, smart phones and social media. There is minimal interest from private companies to arrange for landline telephone services to Swedish citizens which affect old persons especially in the countryside. Old persons may not always keep up with technological innovations and can thus be vulnerable and at risk in contemporary Swedish society.

In sum, instruction giving in medical emergency calls is a complex task for call-takers and callers. Call-takers will continue to experience increasing demands, both demographically and societally driven by an ageing population with vulnerable elderly, disabled patients who rely upon instructions for their care in emergencies and a large number of newly arrived asylum seekers in Sweden. Instruction giving in medical emergency calls and in pre-hospital contexts may be even become more important in the future due to the aging society and lack of emergency response resources in order to act immediately while waiting for ambulance services. There are several issues that have emerged in the empirical chapters of this thesis that can be brought together at this point that offer considerable potential for the future direction of medical emergency call management.

As a concluding section of this chapter four themes will be discussed and suggest some key areas for future work and changes in practice. There are several themes that have materialised out of the analysis of managing medical emergency calls in this dissertation that seem to offer important lessons for practice. These could be seen to centre on the practices of risk management by which early risk identification can be achieved. The terrorist attacks in Paris 2015 and in Brussels 2016 highlighted the vulnerability that exists and that we are living in a "risky"

society. A key challenge for the Swedish emergency response organisation and in other countries is to create and refine risk management practices and build resilience into communities and organisations that can plan for and handle terrorist attacks, refugee crises and climate change threats now facing society. Research of this kind combined with exercising and training can ensure that leaders and emergency response teams are prepared for preventing and dealing with future emergencies.

Knowledge impact and societal relevance

Interactive practices in medical emergency calls are of high societal significance since human lives may be saved or lost as an outcome of what call participants do (or not do). The skill and knowledge contribution with this monograph was threefold: (1) The study contributes to a larger research programme on language use in institutional interaction. It is the first comprehensive analysis of questioning, emotion management, risk management and instruction giving in Swedish medical emergency calls from a larger body of audio-taped naturally occurring interaction data. (2) A major contribution of this dissertation is that medical emergency call interaction between physicians and callers and nurses and callers in Swedish is made visible. It is the first investigation of interactive practices in Swedish medical emergency calls including the three professional groups of physicians, nurses and emergency call operators. Past research has only examined Swedish emergency calls between emergency call operators and callers. The study is thus a significant contribution in the institutional interaction field. The comparative analysis of interactive procedures in medical emergency calls between different categories of call-takers clarifies distinct practices associated with these groups of professionals. (3) The analysis demonstrates the decisive importance of lifesaving contributions of family members of patients and how call-takers give instructions to callers about first aid measures to perform here and now when waiting for ambulance services and also prepare callers to assist persons in future, hypothetical emergency situations. The study is thus a unique competence and knowledge contribution and comparison foundation in relation to other studies about institutional interaction.

The conclusions generated from this dissertation may function as a foundation to assuring and advancing the quality of interactive procedures in medical emergency calls and in other types professional interaction and contribute to improving methods of how to resolve interactional problems in institutional conversations. The study presents significant results to current research in the field of pre-hospital acute medical care interaction. The results of this study are a knowledge and competence base to possibly improve and create awareness of interactive methods that call-takers use at emergency control centres and in other types of rescue operations in society. The findings can hopefully be employed as a

unique material in call-taker training about interactive practices for emergency, health, medical and rescue professionals and students. In this thesis, call-takers are provided with detailed knowledge about emergency response procedures in medical emergency calls that can give diverse viewpoints on professional roles of call-takers, call opportteamies and limitations. To strengthen the orientations of call-takers towards seeing callers as emergency response resources in acting on instructions in medical emergency calls and help persons when waiting for ambulance services can have as an outcome that conditions of persons may be improved and lives can be saved.

The conclusions call attention to the importance of informal caregivers such as family members and witnesses of medical emergencies to initiate laymen achievable first aid measures on patients while waiting for ambulance services to save lives or improve health statuses of patients. The thesis shows that callers perform measures on patients by taking responsibility themselves or by delegation in accordance with instructions given by call-takers. Callers are here provided with methods to save lives and protect patients, themselves and others in medical emergencies.

The knowledge from this thesis may be used in emergency control centre operations, policy development and emergency response training. The four interactive phenomena analysed may benefit call-takers in enhanced competencies in questioning, emotion management, risk management and instruction giving methods. The improvement of the medical emergency calls may also lead to improving patient care in pre-hospital emergency care. The results can be applied in person-centred modes of operations. It appears from the findings that call-takers instructed callers to participate in first aid procedures on patients. The results can also be used to train organisations including patient and relative support groups in life-saving procedures and the handling of different types of acute medical conditions and emergency circumstances.

Areas of future call-taker training can be focused on effective risk and emotion management, communication skills of interviewing callers and offering on-telephone instructions, improvement programmes about, for example, resuscitation and other emergency management procedures in both uni- and multi- call-takergroups using presentations, group exercises and debriefing sessions to any potential emergency issue and taking the perspectives of callers. This study presents an analysis of interactive practices in Swedish medical emergency calls that can be potentially useful for call-takers as a resource for quality and competence development and improvement knowledge when interacting with callers. The knowledge may also be relevant to other forms of institutional calls including healthcare advice calls and calls to the Swedish poison information centre.

The research problem interactive practices in medical emergency calls is beneficial to society because for each one of us can become acutely ill or experience an accident with urgent needs of instructions, emergency response measures, risk management and emotion management as a consequence. Members of society can

thus make use of an understanding of and acquire skills in acute patient care and rescue measures in medical emergency calls. The society needs in this emergency response context proven interactive procedures in order to handle varying patient symptoms and events. In medical emergencies callers receive instructions about what to do in order to prevent medical problems or deaths. Instruction-giving in medical emergency situations consequently sets demands on callers that they understand instructions given by call-takers and are prepared to correctly carry out immediate first aid measures.

When persons are injured and acutely ill in incidents, call-takers instruct callers to check that patients and callers are not in any danger. If they are in danger, callers are instructed to make the situation safe. Callers have then been encouraged by call-takers to continue describing and assessing incidents followed by call-takers instructing callers to carry out basic first aid measures including if a patient is unconscious but is breathing and has no other life-threatening conditions, then the person should be placed in the recovery position. If patients are not breathing normally callers are instructed to start cardiopulmonary resuscitation. Callers are routinely told to stay calm, overview and update call-takers about incidents.

In a further reflection on how my research can be used by the general public and emergency response services in Sweden and globally some suggestions can be made. It is important that call-takers create a trust contact with relatives of patients, support and set up callers to carry out basic first aid procedures on patients when it is clear that the patients can possibly benefit from these procedures. It is better to get relatives involved in helping when they can rather than not contributing in this way in the initiation of pre-hospital emergency response operations before the ambulance crew arrives. Every caller might not see themselves as an emergency caregiver. This study can encourage callers that are not immediately ready to carry out first aid procedures. SOS Alarm and other emergency response service organisations in Sweden and abroad can utilise this information to promote that relatives and other callers become more involved in patient care before the ambulance arrives. It is important to take communicative diseases such as HIV into account regarding mouth to mouth resuscitation and at least carry out heart compressions to save lives of patients.

Suggestions for future research

Important areas for future studies are to discover new interactive phenomena in Swedish medical emergency calls and in other language communties. I suggest that data of medical emergency call interactions may be collected in other countries to compare them to the findings in this dissertation. To determine whether medical emergency call interaction in other language communities follows the same social

structures as those found here in Swedish medical emergency calls, the same research questions used in this study should be utilised with data collected in a variety of languages. Suggestions for further research are additional studies of medical emergency calls to continue to examine interactive activities between callers, nurses, physicians and emergency call operators as collaborative achievements and understandings. This will contribute to co-treatment and co-assessment concerns with patient- and family member centred pre-hospital emergency care.

This investigation forms a comparative database for researchers to understanding questioning, emotion management, risk management and instruction giving in varying types of social contexts. Further research can evaluate different medical emergency call practices in relation to health outcomes of patients. Assessment and decision-making procedures in medical emergency calls can be researched further. More research is also needed in the area of how call-takers and callers co-handle patient conditions in medical emergency calls. Future research might also explore whether there are additional variants within this co-management process in medical emergency calls when including patients with other medical conditions apart from what were described here. Questions in future studies may discuss what practices and forms of reasoning are used in medical emergency calls to achieve patient- and caller-centered orientations when handling emergencies. Currently pre-hospital and acute medical care is focused on the implementation of person-centred care. The acute telephone interaction in medical emergency calls in the corpus of this study demonstrate person-centred practices which can be applied in the research field of person-centred care.

A next step in the research reported here would be to compare and contrast social structures of medical emergency call interactions with the structures of interactions in other pre-hospital care settings, for instance, ambulance service practices making cross cultural comparisons. There are several areas for future research that can be seen to emerge out of the empirical chapters presented in this thesis. Cross-cultural comparative analyses need to be highlighted as they represent important areas for future work. First, the notion of place within emergencies is a topic that can be developed further (Hedman, forthcoming). In an ongoing research project Hedman seeks to explore the impact of place after Hurricanes Katrina and Rita in New Orleans. Second, there is the issue of developing the practices of emotion management and risk management as functional processes within the emergency control centre organisation. Third, there is the potential for new research areas of looking at the combination of emotion management, coping methods and crisis management emergency call-takers use. Hedman and Ferreira (forthcoming) examines professional coping practices in South Africa and Sweden. A weakness in the medical emergency research literature is that it is grounded in Western European and North American contexts why it is important to include African, South American and Asian perspectives on this topic. Fourth, cross-cultural analysis of

ambulance practices in Sweden and Wales with a focus on self-harm emergencies (Hedman and Reese, forthcoming). Finally, this book is designed to be essential reading for students, instructors and researchers in pre-hospital emergency care, sociology, acute medical care, CA, ethnography, interaction studies, linguistic anthropology, medicine, nursing science, social work and sociolinguistics.

10 Sammanfattning
(Summary in Swedish)

Bakgrund

Den här doktorsavhandlingen handlar om medicinska larmsamtal och prehospitala akusjukvårdsaktiviteter för att hjälpa skadade och sjuka människor i nödsituationer. Prehospital akutsjukvård kallas aktiviteten ägnad åt att professionellt bedöma och vårda sjuka och skadade utanför sjukvårdsinrättning. Nödsituationer är oväntade, utanför det vanliga och vardagliga. Att hantera nödsituationer i medicinska nödsamtal kräver att snabba åtgärder vidtas av SOS-centralens personal och ambulanstjänst. Ibland inbegriper hanteringen av nödsituationer även samordnade åtgärder från flera aktörer som ambulans, räddningstjänst och polis. En stor grupp av de inkomna larmen handlar om äldre som fallit och multisjuka äldre med kroniska sjukdomar, som blir akut sjuka. Larmen omfattar också hjärt-kärlsjuka personer med bröstsmärtor, hjärtinfarkt, hjärtstillestånd, kammarflimmer, personer med andningssvårigheter, buksmärtor, njur- eller diabetesproblem, brutna lårbenshalsar, kramper och självmordsförsök. En grupp av nödfallen är alkohol- och drogrelaterade. Samtalsdeltagarna löser specifika uppgifter i larmkontexten utifrån gemensamma och skilda procedurer och professionella målorienteringar, som patientsäker vård. Arbetsuppgifterna fördelas mellan parterna genom att larmcentralspersonalen intervjuar inringare, utför medicinska bedömningar och initierar räddningsåtgärder utifrån SOS-centralens riktlinjer och checklistor och att vårdsökanden (patienter, närstående och vittnen) beskriver personers aktuella symtom och status, tidsförlopp, varaktighet och karaktär av symtom, prehospitala akutåtgärder, diagnos, sjukhistoria och larmkontext. 112-operatörer, sjuksköterskor och läkare vid larmcentralens ambulansavdelning tar emot inkommande larm. I denna kommunikativa verksamhet ansvarar SOS-centralen för dirigeringen av ambulanser enligt ett avtal, som landstinget i länet jag studerat slutit med SOS Alarm, och samarbetar med 12 räddningskårer och 30 ambulansstationer. Larmcentralsmedarbetarna intervjuar vårdsökanden och vårdprioriterar 112-samtal med utgångspunkt i SOS-centralens bedömnings- och åtgärdsriktlinjer och checklistor i form av konstruerade, kommunicerande verktyg som medicinska beslutsstöd, förordningar, bestämmelser, normer, rutiner och regelverk.

Vårdsökandens begäran om ambulans kommer via nödnumret 112 och ett separat telefonnummer för ambulansbeställning, som sjukvården och äldreomsorgen använder sig av och hanteras av 112-operatörer, sjuksköterskor, läkare och ambulansdirigenter. SOS-personalen använder larmcentralens beslutstödssystem Medicinskt index för att svara på och överblicka larm. Indexet beaktar vitala parametrar, som andning och medvetande. Ambulansdirigenter medlyssnar på larmsamtal, bedömer ambulansbehov, prioriterar larm efter behovsgrad, larmar ut och allokerar ambulanser, har en helhetssyn på aktuella larmkörningar och kommunicerar med ambulanspersonal om larm. Ambulanspersonalen består av ambulanssjuksköterska och ambulanssjukvårdare, som ansvarar för akut omhändertagande, undersökning och behandling av personer, läkemedel och sjukvård av personer på larmplats och i ambulansfärd till akutmottagningar på sjukhus där akutsjuksköterska och akutläkare tar över ansvaret för patienter. Avancerad läkemedelsbehandling är möjlig i ambulansen före och under transport i den prehospitala akutsjukvården. Akutbilar med avancerad medicinteknisk apparatur kan larmas samtidigt med ambulans vid prioritet ett-larm, som handlar om livshotande tillstånd, akuta sjukdomsfall eller olyckor.

Syfte

Det övergripande syftet med min avhandling är att beskriva och förklara fundamentala interaktiva procedurer genom vilka sjuksköterskor, läkare, 112-operatörer och vårdsökanden åstadkommer medicinska nödsamtal från etnometodologiskt samtalsanalytiska utgångspunkter. Studien redogör även för etnografiska material om den övergripande kontexten för hantering av medicinska nödsamtal. Procedurer som analyseras i studien är: (1) utfrågningar, (2) emotionellt arbete, (3) riskhantering och (4) att ge instruktioner. Medicinska nödfall består av en stor del interaktion som kan vara livsavgörande för personer. Då akut sjuka och skadade personers liv kan räddas eller förloras som ett resultat av vad SOS-personal och vårdsökanden gör eller inte gör i interaktiva procedurer i medicinska nödsamtal, som undersöks i denna avhandling, är dessa aktiviteter viktiga sociala problem att studera.

Avhandlingens disposition

Avhandlingen är disponerad i tio kapitel och består av tre huvuddelar: en perspektiv- och metoddel (kapitel ett till tre); en renodlad empirisk del, som presenterar resultaten av analyserna av interaktiva procedurer i medicinska nödsamtal (fyra till

åtta) och en sammanfattning på engelska och svenska (nio till tio). Kapitel 1 beskriver avhandlingens syfte och undersökningsobjekt. Det andra kapitlet diskuterar avhandlingens teoretiska perspektiv i form av etnometodologisk samtalsanalys (eng. *Conversation Analysis*), hur CA förhåller sig till andra sociologiska traditioner, karaktäristiska drag för institutionella samtal och tidigare etnometododologisk samtalsanalytisk forskning om larmsamtal och de fyra utvalda interaktiva procedurerna. CA växte fram i slutet av 1960-talet och början av 1970-talet i ett samarbete mellan sociologerna Sacks, Schegloff och Jefferson med inspiration från Garfinkels etnometodologi, Goffmans forskning om interaktionsordningen (eng. *the interaction order*) och av den fenomenologi som formulerades av Schütz.

Kapitel 3 ägnas åt studiens samtalsanalytiska och etnografiska data och metoder. Ljudinspelade medicinska 112-samtal utgör underlaget för avhandlingens analys, som introduceras i detta kapitel. De naturligt förekommande larmsamtalen har transkriberats detaljrikt enligt samtalsanalysens transkriptionskonventioner. Steg i den samtalsanalytiska analysen är observationer, identifiera och samla interaktiva fenomen och beskriva dessa aktiviteter. Kapitlet avslutas med att presentera etnografiska metoder och värdet av att kombinera etnografiska och samtalsanalytiska metoder.

Kapitel 4 om hur medicinska 112-samtal genomförs innehåller en presentation av den mediciska nödsamtalsprocessen. Institutionella kontexter för medicinska nödsamtal, som riktlinjer och beslutsstöd för säkerhetsorienterad prehospital akutsjukvård och ambulanstjänst avhandlas i kapitlet liksom larmcentralen och SOS Alarm, som har den svenska statens uppdrag att ansvara för nödnumret 112. Etnografiska fältanteckningar och larmcentralsbeskrivningen i kapitel 4 visar ett målinriktat lagarbete mellan SOS-medarbetare i akuta larmsituationer, normerande ramverk, sociala statushierarkier och positioner och ledarskaps-, och maktstrukturer baserade på rutiner och socialt samspel i larmcentralens olika grupperingar och sociala konstellationer där SOS-ledningen och läkare har högst status med medföljande privilegier, som besluts- och talförtur, följt av sjuksköterskor och därefter 112-operatörer. Fältstudien och den omfattande datasamlingen av ljudinspelade larmsamtal visar hur 112-operatörerna rutinmässigt lämnar över det mer komplexa medicinska och omvårdnadsintervju- och instruktionsarbetet till sjuksköterskor och rådfrågar läkare till följd av dessa två professioners sjukvårdsexpertis.

Larmcentralsmedarbetarna kännetecknas av deras starka gemenskap och samarbete, kamratstöd, bearbetningsförmågor att hantera traumatiska upplevelser, stora sociala kompetenser och multiförmågor att hantera ett flertal komplexa larmuppgifter samtidigt under hård tidspress och lokalkännedom i geografi och sjukvårdsstruktur. Mellan larm samtalar ofta SOS-personalen om svåra incidenter, som de hanterat i arbetet och hur de känner sig. Författarens samtal med larm- och ambulanspersonal visar att de båda yrkesgrupperna ofta kan hantera det de varit med

om. De som varit med om väldigt svåra nödfall berättade att de har haft svårt för att släppa och handskas med det de varit med om speciellt när barn har varit inblandade. I enstaka fall har ambulanspersonal valt att avsluta sin anställning på grund av upplevda traumatiska händelser.

Data, metoder och teoretiska utgångspunkter

Studiens teoretiska utgångspunkter anknyter till etnometodologisk samtalsanalytisk forskning inom hälso- och sjukvårdsområdet (Sidnell och Stivers 2014; Heritage och Maynard 2006, 2010). Undersökningen bygger på etnografiska fältarbeten (Gobo 2008; Hammersley and Atkinson 2007; Sanjek 2014; Atkinson 2015) vid en svensk SOS-central. Empiriska data utgörs av bandavskrifter av autentiska, ljudinspelade telefonmöten i 112-samtal mellan SOS-sjuksköterskor, SOS-läkare, 112-operatörer och vårdsökanden. Ljudinspelningarna av larmsamtal transkriberades och analyserades detaljerat utifrån ett sekvensanalytiskt perspektiv med fokus på hur samtalsdeltagarna åstadkommer och förståeliggör social interaktion, samtalens övergripande sekventiella uppbyggnad, sekvensstrukturer genom vilka aktiviteter och uppgifter utförs och visas upp och hur deltagarna väljer och formar specifika ord och yttranden i dessa handlingssekvenser. Sekvensordningen i förhandlingen mellan larmsamtalens deltagare står i centrum för avhandlingens sekvensanalys. Särskild uppmärksamhet fästs vid närhetspar, som fråga och svar, som utgör en grundenhet för sekvenskonstruktion i medicinska larmsamtal. Studiens etnografiska data består av intervjuer med larmhanteringspersonal, observationer, fältanteckningar och larmhanteringsdokument, som samlats in under och efter fältarbetet vid SOS-centralen. Avhandlingen är rikligt försedd med samtalsutdrag för att läsaren skall ha möjlighet att undersöka hur larmsamtal genomförs i praktiken.

Resultat

En interaktiv huvudstruktur i medicinska nödsamtal, som återkommer i samtliga empiriska kapitel, är vårdsökandens nödhjälpsbegäran i början av larmsamtalen och SOS-personalens beviljande eller nekande av nödhjälp. SOS-personalen förmedlar rutinmässigt tidigt i medicinska nödsamtal att de ska hjälpa inringare. Kapitel 5 handlar om utfrågningar av vårdsökanden i medicinska larmsamtal. SOS-medarbetare utför medicinska intervjuer med vårdsökanden om patienters aktuella

symtom, snabba och mångskiftande händelseförlopp, genomför en anamnesupptagning om personers tidigare och nuvarande övriga sjukdomar, aktuell medicinering, sociala förhållanden, ställer diagnos, utför muntliga hälsostatuskontroller av personer på telefon, bedömer och förklarar personers tillstånd, vårdbehov och initierar tillsammans med vårdsökanden åtgärder, som kan vara avgörande för ambulanstjänstens kommande omhändertaganden av personer.

Resultaten demonstrerar hur sjuksköterskor och läkare använder huvudsakligen ja-nej-frågor för att kartlägga patientens hälsostatus i intervjuer om symtom och diagnos, aktuell medicinering och sjukhistoria. Läkarnas och sjuksköterskornas hälsostatusfrågor i larmsamtal i vilka patienter hastigt insjuknat eller varit med om olycksfall handlar framför allt om bedömning av orientering, vakenhetsgrad (om patienten är kontaktbar eller icke kontaktbar, öppnar ögonen, svarar på tilltal, lyder uppmaningar, osv.), andning och puls, smärtlokalisering och pågående behandling med läkemedel. Både sjuksköterskornas och läkarnas anamnes omfattar patienters eller närståendes tolkningar av nödfall och redogörelser för patienters hälsostatus före det aktuella larmet. Läkarna och sjuksköterskorna är lyhörda för vad vårdsökanden säger, engagerar och ger instruktioner till vårdsökande i väntan på ambulans att utföra omedelbara åtgärder, som att undersöka om patienten är medvetslös, lyssna på patientens andning eller avsaknad av andning, känna patientens puls eller redovisa om patienten saknar puls, att göra sammanpressningar av bröstkorgen (hjärtkompressioner), inblåsningar i mun eller näsa (mun-till-mun-andning), förhindra patienten från att förblöda och lägga personen i stabilt sidoläge. Svårt sjuka eller skadade patienter i allvarligare nödfall kräver medicinskt kompetenta sjuksköterskor och läkare som bedömer patienter. Sjuksköterskorna genomför rutinmässigt intervjuerna i larmsamtal och lämnar undantagsvis över intervjuansvaret till SOS-läkare vid behov.

Kapitel 6 presenterar känslohantering i medicinska nödsamtal och i synnerhet SOS-personalens inkännande, förtroende- och meningsskapande förmågor att förstå och hantera inringares känsloliv enligt tidigare professionella erfarenheter och larmorganisationens institutionella koder. Den övergripande strategin för larmcentralspersonalen är att utföra flera olika slags känslohanteringsmetoder samtidigt. Analysen visar fyra huvudsakliga typer av känslohanteringsprocedurer: (1) att larmcentralspersonalen med känsloreglering behåller lugnet och undviker att gå upp i vårdsökandens sociala uppvisande av känslor; (2) att presentera positiva beslut om ambulansassistans; (3) problemlösningspresentationer av larmhanteringsåtgärder, och (4) att betona det positiva i nödsituationen med syfte att inge och bevara vårdsökandens hopp.

Kapitel 7 avhandlar riskhantering i medicinska larmsamtal. Riskhantering är beroende av en del olika saker, till exempel vilka symtom som är aktuella, patienters allmäntillstånd och hur situationen ser ut i varje larmsamtal. Riskhanteringsprocessen i medicinska 112-samtal består av sju fundamentala interaktiva metoder: (1) risklyssnande genom aktivt lyssnande efter faktiska och

möjliga risker (som larmcentralsmedarbetarna berättade om i studiens etnografiska intervjuer); (2) riskfrågande; (3) riskidentifiering, som inkluderar insamling av riskuppgifter; (4) riskövervakning; (5) riskbedömning; (6) riskbeslutsfattande och (7) riskreducering, som handlar om att eliminera risker eller att reducera risker till tillfredsställande risknivåer.

I riskhanteringskapitlet presenteras olika nödsituationer där risker förekommer. Exempelvis diskuteras riskvärdering vid akuta sjukdoms- och olycksfall när ambulanshelikoptrar är utalarmerade till incidenter. Ett exempel som tas upp i kapitlet handlar om en drunkningsolycka på en strand utan en förrekad landningsplats. Då är då svårt för larmcentralsmedarbetarna att ha kontroll över personer, som befinner sig på olycksplatsen eller rör sig över området. Här ansvarar piloten på ambulanshelikoptern för att säkerställa säker landning. Ambulansdirigenten kan vara delaktig i den processen på olika sätt, till exempel genom att larma ut ambulans eller räddningstjänst för att bistå med hjälp. Det kan handla om att transportera sjukvårdspersonal till eller från helikoptern och olycksplatsen om ambulanshelikoptern inte kunnat landa i närheten av nödfallsplatsen. Vid t.ex. trafikolyckor utalarmeras automatiskt räddningstjänsten och då återfinns det kommunikationskanaler för ambulanshelikopter och räddningstjänst att tala med varandra utan att SOS-centralen blir inkopplad.

Det medicinska beslutsstödet är generellt uppbyggt med en viss säkerhetsmarginal, som är anpassat efter arbete på larmcentral, för att vara så patientsäkert som möjligt. En 112-operatör kan endast kommunicera verbalt med vårdsökanden vilket medför att medicinska bedömningar måste anpassas efter arbetsmiljön och efter de tillstånd som patienter befinner sig i, samt efter de symtom som råder i den aktuella situationen. Beslutsstödet är indelat i 30 stycken kapitel med symtom som bakgrund, exempel på kapitel kan vara ”Andningssvårigheter” eller ”Bröstsmärta/Hjärtsjukdom”.

Upplysningar om aktuell situation, patientens bakgrund och förutsättningar inhämtas via den medicinska intervjun med inringare. Det medicinska beslutsstödet ska vara en hjälp för SOS-medarbetaren att fatta rätt beslut om prioritet eller allvarlighetsgrad på händelsen. SOS-personalen tar hänsyn till ålder, anamnes, aktuell fysisk och psykisk miljö, aktuella symtom, allmäntillstånd etc. när de bedömer risken för den enskilda vårdsökande. I dagsläget har larmcentralsmedarbetarna inga riktlinjer för detta. I nuläget utgår SOS-personalen från det medicinska beslutsstödet vid riskidentifiering. De olika prioriteterna och allvarlighetsgraderna i det medicinska beslutsstödet styrs utifrån symtom, som kan vara sammanlänkade i en specifik nod, som i sin tur genererar en specifik prioritet. Beroende på hur kombination av symtom ser ut får SOS-medarbetare olika prioriteter utifrån principen ju allvarligare symtom, desto högre prioritet. Medicinskt index är uppbyggt på ett sätt som medför att SOS-medarbetare ska få samma nivå på prioriteringen oavsett vilket kapitel SOS-medarbetare arbetar i. Ett exempel kan vara om patienten har bröstsmärta och andningssvårigheter. Oavsett

vilket av de två olika kapitlen ”Bröstsmärta/Hjärtsjukdom” och ”Andningssvårigheter”, som SOS-medarbetare för tillfället är inne i kommer prioriteten vara densamma. Kombinationen av dessa symtom är alltid högsta allvarlighetsgraden prioritet 1. Ett annat exempel på riskbedömning är ogynnsam miljö. Ogynnsam miljö finns som dokument/riktlinje, men även i delar av det medicinska beslutsstödet. Detta handlar om att SOS-operatören i varje nödsamtal ska bilda sig en uppfattning om miljön som den vårdsökande befinner sig i kan orsaka ytterligare skada för den vårdsökande på något sätt, till exempel fysiskt eller psykiskt, detta ska då föranleda en högre allvarlighetsgrad/prioritet. En symtombeskrivning som i vanliga fall skulle generera prioritet 2 kan i vissa fall generera prioritet 1 om den miljö som den vårdsökande befinner sig i kommer att påverka denne negativt på något sätt.

Kapitel 8 handlar om instruktioner i medicinska larmsamtal. Larmcentralsmedarbetarna ger instruktioner på huvudsakligen fyra sätt: (1) styrande instruktioner med syfte att bibehålla akut flöde när vårdsökanden inte följer den standardiserade nödsamtalsproceduren; (2) åtgärdsinstruktioner; (3) institutionella responsinstruktioner och (4) summerande instruktioner. I instruktionsdelen av larmsamtal ger SOS-personalen instruktioner i form av direktiv och rekommendationer till vårdsökanden om vilka livräddande åtgärder, som förväntas utföras för att rädda livet på eller förbättra patienters hälsotillstånd.

Larmcentralspersonalen instruerar vårdsökande genom att fråga, föreslå, förorda, befalla och lugna. Instruktionerna består av första hjälpen- och hälsofrämjande åtgärdsinstruktioner. Första hjälpen-åtgärder består bl.a. av vändning av patient till stabilt sidoläge, skapa fria luftvägar och förberedelser för att hjälpa patientens andning genom mun-mot-mun-metoden och hjärt-lungräddning utförda av patientens närstående. Patienter deltar i larmsamtal i samspel med SOS-medarbetare genom att redogöra för sina symtom, anamnes och läkemedel.

Instruktioner initieras genom att vårdsökande beskriver personers specifika sjukdomstillstånd och sjukhistorik om läkemedel, tidigare sjukdomar och vård. Uppgiftslämnarnas kunskaper om patienters hälsotillstånd utgör underlag för larmcentralspersonalens formulering av instruktioner utifrån professionell larm- och medicinsk kunskap. För att larmcentralsmedarbetare ska kunna ge instruktioner måste uppgiftslämnarna beskriva patienters hälsotillstånd i detalj. Inringarna i form av patienter, närstående, närstående och vittnen medverkar i instruktionssekvenserna genom att utföra åtgärder på patienter och förbereda sig för att utföra åtgärder patienter före ambulanstjänstens ankomst. Målet med uppgiftslämnarnas medverkan i att hjälpa patienter utifrån larmcentralspersonalens instruktioner är att förebygga och minska risken att patienters tillstånd försämras före ambulanspersonalens ankomst.

När vårdsökande beskrivit patienters aktuella hälsotillstånd, symtom de har (t.ex. svår hjärtklappning, andfåddhet, trötthet, andningssvårigheter) och hur de upplever dessa i form av smärta eller obehag ger larmpersonalen medicinskt

motiverade instruktioner utifrån den hjälpbehövandes behov och nödfallssituationen. Innehållet i instruktionerna varierar. Instruktionerna handlar bl.a. om vad uppgiftslämnarna ska vara uppmärksamma på när det gäller patienters hälsotillstånd, om aktuella metoder för undersökning, fortsatt vård och behandlingsåtgärder, syftet med behandlingen, hur den går till, hur stor läkemedelsdos som ska tas, att inte ta mer läkemedel (t.ex. det kärlvidgande medlet nitroglycerin som bryter pågående kärlkrampsattack och förebygger nya), vem som kan ge behandlingen när den kan inledas och förväntade resultat), riskfaktorer samt om hur läkemedel verkar och varför patienten ska ta dem. I slutet av larmsamtalen följer larmcentralspersonalen ofta upp patienters hälsotillstånd och upprepar tidigare givna instruktioner.

Resultaten visar att tidigt påbörjade åtgärder på patienter utförda av närstående och andra personer, som befinner sig nära patienten i väntan på ambulanstjänst bidrar till att öka förutsättningarna för livräddande och livsuppehållande behandlingsresultat. Denna slutsats refererar till nödfall där omständigheterna tillåter att närstående eller larmåskådare initierar och fortsätter livsviktiga åtgärder på patienter tills ambulanstjänsten anländer. De närstående blir i dessa larm instruerade av sjuksköterskor, 112-operatörer och undantagsvis av läkare om praktiska åtgärder och patientundersökningar av aktuell status och vitala tecken, som normal andning, rörelser och palpabel puls. Närståendes och vittnens deltagande i nödfallsresponsarbete syftar till att rädda patienters liv och förbättra patienters sjukdomsstatus.

Kunskapsbidrag

Avhandlingen kan tillföra ny kunskap och förståelse för institutionella principer och samtalsprocedurer i hur sjuksköterskor, 112-operatörer och läkare ställer frågor, handskas med känslor, hanterar risker och ger instruktioner till inringare i svenska medicinska larmsamtal. Undersökningen kan bidra till att öka patienters möjligheter till hälsa, symtomreduktion och överlevnad genom att skapa bättre förståelse för hur larmcentrals- och ambulanspersonal och allmänheten hanterar patienters akuta tillstånd i larmsamtal. Tidigare forskning har begränsats till sociala strukturer i nödsamtal mellan enbart 112-operatörer och vårdsökanden. Studien väntas därmed ge nytt tillskott till forskning om institutionella samtal mellan 112-operatörer, sjuksköterskor, läkare och vårdsökanden.

Avhandlingen vänder sig till studerande på olika nivåer och forskare, som undersöker professionella samtal, krishantering, prehospital akutsjukvård (SOS Alarm, sjukvårdsrådgivning och ambulanssjukvård), personal vid SOS-centraler, vårdpersonal, som är verksam i prehospital akutsjukvård, läkare i akutsjukvård och sjuksköterskor i telefonrådgivning och på sjukhusens akutmottagningar.

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Appendix: Acute medical problems in the medical emergency call data

Acute medical problems in my data are comprised of a variety of illnesses and injuries such as:

- orthopaedic injuries, such as fractures, strains and sprains; traumatic injuries from such incidents as falls and road traffic collisions with the largest patient group in the data corpus being older people that have a fall and are in need of medical emergency care;
- respiratory disorders, including asthma, acute respiratory failure, chronic obstructive pulmonary disease, pulmonary embolism;
- cardiovascular disorders, such as cardiac arrest and acute coronary syndromes (myocardial infarction and unstable angina);
- deliberate self-harm, including jumping from bridges and buildings, and ingestion of poisons or overdose;
- mental health problems;
- injuries resulting from abuse and violence, such as knife injuries;
- gastrointestinal and hepatic disorders, including gastrointestinal bleeding, acute pancreatitis, acute liver failure, bowel obstructions and acute cholecystitis.

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