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Wennlund, Klara Torlen

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Klara Torlén Wennlund ![ORCID],[1] Lisa Kurland,[1,2] Knut Olanders,[3] Amanda Khoshegir,[4] Hussein Al Kamil,[4] Maaret Castrén,[1,5] Katarina Bohm ![ORCID] [1,6]

¹Department of Clinical Science and Education, Södersjukhuset, Karolinska Institute, Stockholm, Sweden
²Department of Medical Sciences, Örebro University, Örebro, Sweden
³Department of Intensive and Perioperative Care, Skåne University Hospital Lund, Lund, Sweden
⁴Department of Clinical Science and Education, Karolinska Institute, Stockholm, Sweden
⁵Department of Emergency Medicine, University of Helsinki, Helsinki, Finland
⁶Emergency Department, Södersjukhuset, Stockholm, Sweden

Correspondence to
Dr Klara Torlén Wennlund;
klara.torlen.wennlund@ki.se

ABSTRACT

Objectives To explore the emergency medical dispatchers (EMDs) experiences of managing emergency medical calls.

Design A qualitative interview study with an inductive approach. EMDs were interviewed individually using a semistructured interview guide. The verbatim transcripts were analysed using a qualitative content analysis.

Setting EMDs, without a professional background as registered nurses, were recruited from emergency medical communication centers (EMCCs) within Sweden.

Participants To achieve a varied description of EMDs' experiences, participants were included from several EMCCs nationally, using a convenience sampling. Interviews were performed up until saturation of data, resulting in 13 EMDs from 7 EMCCs being interviewed. All the EMDs were women, ranging in age from 28 to 61 years (mean 42 years), and had worked in emergency medical dispatching between 1 and 13.5 years (mean 6.5 years).

Results The analysis revealed the main category—*to attentively manage a multifaceted, interactive task*—made up of three categories: *utilize creativity to gather information, continuously process and assess complex information,* and *engage in the professional role*. The content of each category was reflected in several subcategories further described and illustrated with representative quotes.

Conclusions Managing emergency medical calls was experienced by EMDs to attentively manage a multifaceted interactive task. Core parts were described as: the ability to *utilize* creativity to gather information, continuously process and asses complex information, and engage in the professional role. Our results could be beneficial for emergency care managers when designing training programmes and organising EMD work and the EMD work environment, including further development of dispatch protocols and implementation of regular feedback sessions. Moreover, the results indicate that aspects such as self-awareness and emotional challenges encountered during EMD work could be important matters to discuss during staff evaluations.

Strenghts and limitations of this study

► The convenience sampling ensured inclusion of emergency medical dispatchers (EMDs) with a wide range of work experience from different emergency medical communication centers.
► The authors come from different professional backgrounds and thereby have varying preunderstandings of the context, ensuring a high degree of reflexivity during the analysis and, ultimately, a more diverse understanding of the reported experiences.
► The participating EMDs were all women, which may affect the transferability of the current findings to male EMDs.
► The findings may be less transferable to emergency care systems that require their EMDs to have a professional medical background, which Sweden in general does not.

is required, and if so, the level of priority.[1] Therefore, the emergency medical dispatcher (EMD) must, by means of an interview, assess the severity and nature of the caller's medical condition (or that of the person in need of assistance). For this purpose, standardised triage systems that include dispatch criteria are used to support the EMD.[2–4] The EMD's assessment and the location of the caller is conveyed to the ambulance crew, while the EMD supports the caller and gives medical advice if appropriate.[5]

The task of emergency medical dispatching can be complex, potentially affecting the patient's outcome.[6–8] Decisions must be made quickly as new incoming calls are waiting to be answered. Callers may be under stress or in an altered cognitive state,[9 10] and language difficulties may influence the communication.[11] In addition, the EMD may only have access to secondhand information from relatives or bystanders,[12 13] further increasing the complexity of the task.

Despite being an important part of the first link in the chain of emergency care,[9] there is a paucity of studies on EMDs' experiences

BACKGROUND

An emergency medical call is a request for help and support. As response resources are limited in any healthcare system, ultimately, a decision whether to dispatch an ambulance

in relation to the managing of emergency calls. Previous studies have focused on the assessments of difficult calls[14] and factors affecting the psychological health of EMDs.[15] Aspects that characterise EMDs' work performance and factors influencing their decisions have been described in only a few studies.[16 17] How EMDs perceive their interactions with the caller has been explored recently, resulting in a suggested model for EMD workflow.[18] Given the international diversity in how emergency calls are processed the transferability of these findings might be limited. A broader understanding of phenomena that affect the EMDs management of emergency calls is important. In the Swedish setting, it is primarily an EMD who assess the emergency calls. However, previous research have focused mainly on experiences of registered nurses (RNs) working at the emergency medical communication center (EMCC).[12 19–21] Therefore, the aim of the current study was to explore EMDs experiences of managing emergency medical calls.

MATERIAL AND METHODS
Study design
The study used a qualitative interview design with an inductive approach[22] and was performed in February 2020. A sample of 13 EMDs were interviewed individually using a semistructured approach, and standards for reporting on qualitative studies were followed.[23]

STUDY SETTING
The Swedish emergency call number ('112') is operated by a national, publicly owned organisation—SOS Alarm—with 15 EMCCs nationwide and is responsible for the emergency medical dispatching in the majority of the country's health regions.[24 25] All primary call-takers are certified EMDs, a certification acquired via a 14-week training programme combined with mandatory annual recertification. The EMD performs the interview with the caller according to a predefined structure, supported by the criteria-based dispatch protocol of the Swedish Index to Emergency Medical Assistance (hereafter the Swedish Index)[3 25] for medical emergency calls. The EMD begins by asking whether the person in need of assistance is an adult or a child, followed by a set of mandatory questions to assess breathing and the level of consciousness. The EMD then determines the geographical location, takes the caller's contact information, and evaluates the vital signs. The interview continues with the objective of clarifying the reason for the call, deciding whether an ambulance is required and, if so, the priority level for dispatch.[3] The Swedish Index comprises 30 chapters broken down into 'nodes' based on chief problems. Each node is further subdivided into a list of criteria for medical conditions that are assigned an appropriate priority, ranging from: priority 1 (immediate life threat) to priority 3 (least urgent). Priority 4 is assigned to patients who do not require emergency medical assistance but are in need

of assistance for transportation to a healthcare facility.[3] In addition to assigning a dispatch priority and medical condition, the EMD documents important information by using a structured situation-background-assessment-recommendation (SBAR) format. In performing this work, the EMD can request support from an RN, or in some cases a physician, to assist with both the interview and assessment. The RN can either provide support or take over the call. Once it is determined that an ambulance is required, an ambulance dispatcher dispatches an ambulance. The ambulance crew then receives information on the priority level, medical condition, and the SBAR report.

Participants and data collection
The inclusion criteria for participation in the study were: EMDs with at least 6 months' experience of emergency medical dispatching, which was estimated as sufficient for EMDs to acquire experiences related to the study aim. An invitation letter was posted internally on the SOS Alarm website at two time points. To achieve a varied description of the EMDs' experiences, participants were included from several EMCCs nationally, using a convenience sampling. Schedule of interviews were arranged by one author (KT). The authors had no other contact with the participants prior to the interviews. The interviews were performed in person by one to four of the authors (KT, HAK, AK, KB), either at the EMCC or the research institute, based on the interviewee's request. One author led the interview and the other author(s) present observed. No non-participants were present during the interviews. Sampling continued until no additional knowledge was obtained, that is, saturation was achieved.[22] A total of 13 interviews were performed with EMDs from 7 EMCCs. All the EMDs interviewed were women, ranging in age from 28 to 61 years (mean 42 years), and had worked in emergency medical dispatching between 1 and 13.5 years (mean 6.5 years). The interviews lasted between 36 and 65 min (mean 47 min) and were digitally recorded and anonymised.

A predefined, semistructured interview guide was used for all the interviews (online supplemental file 1). The guide was developed in accordance with methodological guidelines[26] and pilot tested; the pilot interview was not included in the analysis. The interview began with an introduction specifically worded to remind the participants of the study's objective and to set the context for the interview. The guide consisted of open-ended questions designed to encourage the participants to speak freely about their experiences of managing emergency medical calls. As a whole, these questions related to the process of assessing emergency medical calls, consulting RNs and the dispatch protocol. The interviewer also asked follow-up questions to get the participants to clarify their answers and encourage them to give descriptive examples.

Analysis

The data collected was analysed using qualitative content analysis, with an inductive approach, as described by Elo and Kyngäs.[27] All the four authors who took part in the interviews participated in the various phases of the analysis. In the preparation phase, each interview was transcribed verbatim and read through several times to allow the researchers to become immersed in the data. The organisation phase of the analysis involved performing an open coding of meaning-bearing units until all aspects of the content relevant to the aim of the study had been described. The codes were compiled into a coding sheet and grouped as belonging to each other to form broader subcategories. The subcategories were then grouped into still broader categories and these categories further reduced to the main category. The reporting phase involved formulating a description of the content of each category. A continuous dialogue between the authors throughout the analysis process ensured consistency in the interpretation of data. And although the phases have been listed separately here, the analysis proceeded in a non-linear fashion, with the researchers continually moving back and forth between the transcript, codes, subcategories, and categories to preserve the integrity of the data.

Patient and public involvement

There was no patient or public involvement in the study.

RESULTS

The analysis revealed the main category—*to attentively manage a multifaceted, interactive task*—made up of three categories: *utilize creativity to gather information, continuously process and assess complex information,* and *engage in the professional role*. The content of each category is reflected in its subcategories as presented in figure 1 and described and illustrated with representative quotes below.

Utilize creativity to gather information

The EMDs described the interview of a caller as challenging detective work that requires the application of problem-solving from different angles. The challenge of talking to people on the phone to assess the severity of medical issues was highlighted, as well as the importance of treating callers with respect.

Apply standardised and adapted interview technique

The EMDs described how they perform the interview following a predefined structure, to gain clarification regarding the symptoms—not make a diagnosis. Identifying the primary problem can be challenging when the caller mentions several symptoms, leading to difficulties when determining what node to use as an entry point for the interview. The dispatch protocol was experienced as helpful when performing the interview. However, it also endangers the interview since it sometimes causes the EMDs to lose focus on the interaction with the caller. The variety of nodes was found to facilitate the assessment. At the same time, it was experienced as difficult to navigate and thus lead to frustration.

> Sometimes it can be a little frustrating because in a way the protocol is too open, because it is too much, in another way it is too closed because sometimes it does not fit anywhere. So, it can be both, depending on the situation. …/… But I use it as a way to ask my questions and to be able to exclude one or the other. (EMD#7)

Determining a timeline and grading the symptoms is challenging, as is the assessment of vital signs, that is, consciousness, breathing and circulation. Different strategies are then used, such as to ask illustrative questions and exemplify. Asking about the effects on functional ability was also experienced as useful, especially when the caller reports pain. It was noted that the callers do not
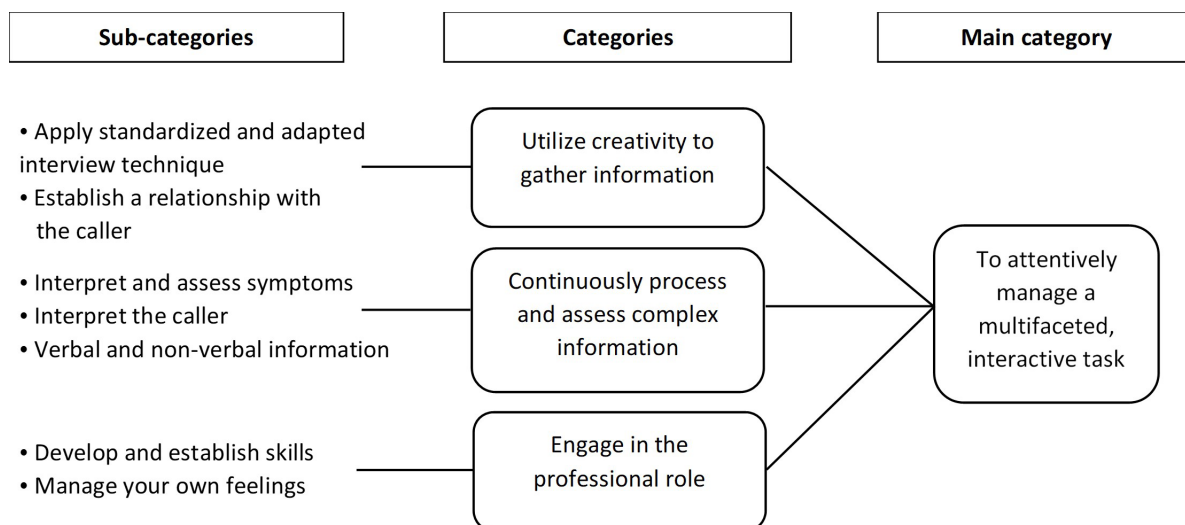

Figure 1 Subcategories and categories that make up the main category, illustrating how emergency medical dispatchers experience managing emergency medical calls.

mention certain things spontaneously; hence, some questions are put to the caller explicitly to elucidate the risk of the presence of specific conditions.

Although many questions are recurrent, every call is unique. According to the EMDs, this requires a sensitive listener, situation-relevant action and the ability to quickly reformulate questions. The ability to use different terminology and alter one's rate of speech and vocal pitch is useful for different calls. Emergencies require a somewhat curter and more authoritative communication strategy to manage the call, sometimes in the form of interrupting the caller or raising one's voice. In calls involving many protracted symptoms, a gentler communication strategy is considered more appropriate.

…Your voice and the words you use and how you express yourself are very important tools. (EMD#4)

Establish a relationship with the caller

According to the EMDs, to establish a relationship, create an alliance and build trust with the caller are important prerequisites for a successful interview. Showing empathy and validating the caller's feelings are helpful in doing this, as is calling the person by name.

…I have to validate their feelings and show understanding, and I must do it in the right way, so that, well, lots of patience, lots of understanding, and the ability to formulate things in several different ways. (EMD#6)

Some EMDs noted that what can be perceived as many questions may irritate the caller. Explaining why the questions are relevant makes the dialogue smoother. One key factor is to confirm, early in the call, that help is on its way. The EMDs perceived that the caller often realises when other tasks are distracting (eg, pinpointing their location). Informing the caller what they are doing at every given moment can have a calming effect. Calls with healthcare professionals can be especially challenging since they often have clear expectations regarding the outcome of an emergency call and are less patient with the EMD during the interview.

Continuously assess and process complex information

The EMDs described how they use the dispatch guidelines, their own experience and 'gut-feeling', and consultations as support in evaluating the information from a caller, that is, both verbal and non-verbal information.

Interpret and assess symptoms

The EMDs try to group the caller's symptoms and weigh all the information they are given. An assessment is made by comparing the information to the listed dispatch criteria of each priority level in the most appropriate node. However, an experience-based assessment where one's gut feeling comes into play also affects the choice of node and priority level. How a gut feeling arises and what it consists of was not clearly explained.

…It's good to have something to adhere to, and obviously we go by what they say and prioritize accordingly. Then you also know that uh…you take in the whole call. So even if you get some sentences that point to a certain thing, it's still the whole call that determines the prioritization in some way. (EMD#5)

The EMDs explained that they aim for a patient-safe prioritisation, meaning that if they are uncertain, they assign a higher priority to the call, to be on the safe side. A sense of responsibility and underlying fear of making mistakes also affects the choice of priority level. Dispatching an ambulance with an unnecessarily high level of priority can nevertheless cause the EMDs to feel frustrated. When there is no single node that entirely matches the caller's symptoms, a node with a priority level that matches the EMD's assessment of the level of severity is chosen. Documentation of additional information in the SBAR format then serves as a way to clarify the situation for the ambulance crew.

The EMDs explained that urgent calls are easier to assess, whereas vague calls about multiple symptoms are more difficult and challenging—but therefore also interesting. The absence of support regarding risk assessment in relation to age was a point noted. In the case of uncertainty or when there was a discrepancy between the EMD's gut feeling and what the dispatch protocol indicated, an RN is consulted. Calls that frequently require consultation are those concerning abdominal problems and children. In the case of abdominal problems, the symptoms are often diffuse, and assessing sick children can sometimes be frightening. Depending on their age, children may not be able to answer questions themselves, which is why consultations are reassuring. An RN may also be consulted to determine the caller's primary problem or to assess the possible effects of medications or background illnesses. Even though the EMDs have a feel for the level of priority, it is reassuring to consult someone with more extensive medical knowledge. A decision to not dispatch an ambulance may also be verified with the RN.

…Something isn't right here. Or I'm not getting answers to my questions, or I'm getting vague answers, or I'm hearing medical terms that I don't understand. (EMD#6)

There is often agreement on the assessment and the EMDs find that the collaboration with RNs works well. Such consultations become less common with increasing experience. Support is not always needed; therefore, when an RN is connected to calls due to regional agreements, the EMDs feel frustrated because the RN has unnecessarily been occupied.

Interpret the caller

The EMDs explained that who the caller is, is important for, and may influence, the assessment. Assessments should at the same time be made without prejudice. Everyone, regardless of background and status, has the

right to medical assistance. For the most part, EMDs find callers to be truthful about what has occurred, though it does happen that some callers exaggerate or understate the situation—which can be discerned from nuances in their choice of words. Older people could be perceived as understating their symptoms, while younger people could be perceived as exaggerating theirs. Even though it can be difficult to handle the feeling that a caller is downplaying or exaggerating their symptoms, EMDs must rely on what callers tell them. People who call several times a day and report problem of serious symptoms are especially difficult to assess and take seriously.

> We have to rely on the caller, we have to believe them. Even if I understand, or hear, or believe that the caller is exaggerating to get an ambulance quickly, I have to rely on the caller. (EMD#6)

The EMDs explained the difference between assessing first-hand and secondhand information. It is easier for them to get a quick overview of the situation by talking to the person in need of medical assistance, which they try to do at the earliest opportunity. Secondhand information is harder to assess as it is often difficult to understand whose perspective is being expressed and thereby to get a true picture of the situation and interpret the relevance of the information provided, leading EMDs to worry that they may be missing important information.

> You always need to talk to the patient if at all possible. At least listen to them. For a few seconds at least—to hear how they sound. But it's always best to hear the patient's version whenever possible. (EMD#4)

Verbal and non-verbal information
The EMDs stressed that what the caller tells them is crucial for the assessment, at the same time as the EMD's own experience of the situation is also considered. Furthermore, what is expressed in words does not say everything and non-verbal information is equally important. The lack of visual information makes the evaluation difficult and requires the EMD to listen for details, such as rales, vocal pitch and background noises. Moreover, the EMDs explained the importance of listening for what is left unsaid and 'reading between the lines' during the entire interview. Even the initial seconds before the EMD greets the caller are important because valuable background noise can be picked up.

> I think I make my assessment quite quickly, as soon as I get the call. You can hear quite quickly from the tone, voices, etc., what this is going to be. (EMD#2)

The EMDs said that they can often tell whether the caller is not giving truthful account, for example, by spotting discrepancies between what the caller tells them and what they hear. For example, as one EMD explained, a caller in pain will have a hard time talking normally but rather speaks with an affected tone, and intermittently. At the same time, the EMDs also drew attention to the

complexity of determining the truth, between what the caller says and how the caller sounds. When it comes to assessing breathing, the EMDs rely to a high degree on what they hear. They listen for respiratory rate and whether the caller has dyspnoea or not, as well as for shallow and agonal breathing.

Engagement in the professional role
The EMDs described themselves as a central link in the emergency care chain. The driving force behind their work is a desire to help people, which requires more than just healthcare knowledge. Continuing professional development, colleagues and a good sense of self-awareness are key components for establishing one's professional role.

Develop and establish skills
EMD work requires versatile and comprehensive skills, which are developed continuously. How calls are handled is based on formalised education such as supervised training as well as internal training courses. Experience develops over time and, with this experience, ways of working. The EMDs gradually become more confident in their own assessments, rely more on gut feeling, and consult an RN less frequently. Learning from colleagues was described as essential. EMDs discuss calls and consult one another both during and after calls. Consultations with RNs and daily group debriefings, as well as supervising other EMDs, were described as important learning opportunities.

> What do colleagues say? How do they ask the questions? // You try to find your own workflow. I receive training from my supervisor, and I do many things the way she does, but with my own thoughts and angles of approach. You start a question bank in the back of your mind and build on it. (EMD#9)

The EMDs rarely receive feedback on their work, that is, regarding how they perform interviews and whether the assessments and prioritisations they make are correct. They explained that they *think* they are doing a good job—but they do not know if this is the case. They use different strategies for following up their work. Calls are processed by going over them in their heads. After difficult calls, listening to the recording or holding a debriefing with the team leader is useful. Following up on an ambulance prioritisation in the case log is sometimes done to determine whether their respective assessments correspond. Rarely, but in some cases, there is a phone call with the ambulance staff. The EMDs expressed a desire for more formalised and frequent feedback on their routine work.

Manage your own feelings
Having a self-awareness, of both their strengths and their weaknesses, enables EMDs to handle difficult calls appropriately while maintaining an impassive and objective approach. Despite the seriousness of the calls, emotional involvement rarely occurs. The reason for this is a strong focus on the task and a conscious suppression of one's

own feelings—a total engagement in the professional role.

> You are so absorbed in the call, so focused on this particular person that you don't really have a sense of yourself during the call; it returns only afterwards. (EMD#4)

Certain situations have more of an effect on the EMDs, and what they are feeling on a particular day has an impact on their work. EMDs may feel anger during abuse-related calls, or a sense of inadequacy, or emptiness in the case of a suicide attempt or suicide death. They may also experience fear during calls about a seriously ill child or be deeply touched during calls concerning people in palliative situations. Calls regarding ongoing births can evoke both terror and euphoria, and psychiatric conditions are difficult to handle emotionally. In order to maintain their professionalism during calls, the EMDs apply different strategies, for example, deep breathing or changing the focus of questions. Asking for help from colleagues can also provide a new perspective and help to preserve objectivity. The EMDs explained that when dealing with challenging calls—a serious illness, life-threatening situation, or suicide—it was reassuring to know they were not alone. The knowledge that they were in this together can be sufficient to make the EMDs feel safer. The importance of putting each call behind them before answering the next one was emphasised. This could be achieved by taking a minibreak or attending to routine tasks related to the technical equipment. After a call, EMDs can let their feelings out. For example, it is not uncommon for them to cry or feel elated. Venting suppressed emotions with colleagues is also relieving. The EMDs noted that they rarely brought their work and work-related worries home and, thanks to these different strategies, only a few of the calls they have handled over the years get stuck in their memory.

> …When you finish work, you have to let it go. You have to do this. Otherwise, you can't keep working there. It would be impossible. You mustn't take anything home with you. //…We can't be all blubbering and weepy every day, that wouldn't work. That would be unbearable. (EMD#1)

DISCUSSION

In summary, the EMDs' experiences of managing emergency medical calls can be described as attentively managing a multifaceted, interactive task. Given the unique context of each call, EMDs utilize their creativity to gather information, continuously process and assess complex information and engage in a professional role.

When gathering the information needed for the assessment, utilisation of creativity was experienced as essential. Therefore, the combination of a standardised and an adapted interview technique is used. While the EMDs experienced that the dispatch protocol assures the quality of the interview, they also felt that it hampers the dialogue. Similarly, to previous reports,[14] the EMDs experience difficulties in the absence of a well-defined primary problem, which in turn is recognised as a barrier to the assessment.[12] Given these findings, we suggest that dispatch protocols should be designed to provide guidance independently of when the caller's description of the problem is not worded exactly as formulated in the protocol. The EMDs described a questioning technique that appears to be analogous to one previously associated with successful assessments.[12] However, the use of closed-loop communication, which has been shown to contribute to safe and effective communication,[28] was not explicitly mentioned. Regardless of which dispatch protocol is used, an additive use of such closed-loop communication strategy could be helpful to clarify factors that are beneficial for the assessment, such as the primary problem or a timeline. As reported previously,[12] the value of different strategies, like adapting one's vocabulary, rate of speech and vocal pitch, was noted by the EMDs. However, the EMDs in this study experienced a need for different strategies with respect to the urgency of the situation. This contrasts to prior evidence that, in general, callers are calm enough to be interviewed in a scripted and structured fashion.[29] Acknowledging and expressing empathy for the caller's situation have been reported as important for managing difficult calls.[14] The EMDs in the current study underpin the importance of such approach, independently of the level of urgency or type of call. There is some evidence, from telenursing, of gender biases affecting the communication.[30 31] Whether there are gender differences in how EMDs treat and establish contact with callers remains unknown. And whether callers feel acknowledged is undetermined from this study but is likewise another important question to be answered. In the prehospital setting, a trusting relationship has been reported as resulting in more cooperative patients who shared more accurate information with the caregiver[32]—an experience reported by EMDs as well.[17] In our study, EMDs perceived a need to create an understanding for their task to facilitate the dialogue. Public campaigns about key components of the emergency medical call could help to support this. Healthcare professionals who call for an ambulance also need to understand the importance of communicating the patient's status to the EMDs.[14 18]

To continuously process and assess complex information was reported as an important component in the management of emergency calls. Similarly to other reports, the EMDs combine the use of guidelines, previous work experience, gut feeling and consultations to evaluate information and make an assessment.[16 18] Compliance with dispatch protocols has been described as important for a successful assessment.[10 33] In general, EMDs seem to need more guidance and support when dealing with non-urgent calls with vague symptom presentation.[14 16] The EMDs in the current study also experienced a lack of support regarding risk assessment in relation to the

caller's age. Even though increased age is known to be an important clinical factor that affects the need for care, older people remain less likely to receive the highest dispatch priorities.[34] It would seem that EMDs are aware of the importance of age but are unable to integrate this awareness into their assessment due to the absence of age criteria in the dispatch protocol. The use of SBAR emerged as a strategy to overcome difficulties in calls when no matching node is found, or when contradictory information is encountered. As a structured handover technique, SBAR has the potential to improve the quality of information.[35] However, to our knowledge, there is no evidence on whether EMDs document according to SBAR, whether the documentation contains valuable predictive information, or how it is received by the ambulance crew.

Evaluating complex information was further described as involving the consideration of both verbal and non-verbal information. Consistent with previous findings,[14 16] the importance of verbatim wording and nuances, as well as non-verbal expressions and sounds, was emphasised by the EMDs. Considering non-verbal information was experienced as both fruitful though potentially also fraught with pitfalls and challenges. Similarly, contradictory background sounds and inconsistencies between reported symptoms and the EMD's perception of the situation have been identified as barriers in the assessment.[12] Moreover, the EMDs in the current study experienced difficulty performing the interview and making assessments based on secondhand information. This seems to be a shared experience,[14 18] which is also supported by documented misjudgments in and complaints filed regarding emergency medical dispatch.[36] Whether or not EMDs are more cautious in their assessments when they are unable to talk with the affected person directly is a question that was not answered in the current study. Yet, they seem aware of the importance of this direct communication. In summary, given the international similarities in the task of managing emergency medical calls, which includes assessing the severity and nature of medical conditions by means of a telephone interview, these findings could most likely be transferable to other settings.

Engagement in the professional role was also described as important. Strategies to keep one's emotions in check and maintain objectiveness are commonly used.[14] The EMDs in our study emphasised interaction with colleagues as key to handling emotions and difficult calls. Unlike in other settings,[16] the EMDs felt they had good access to direct support, which could explain why stress did not emerge as a distinctive experience in our study, although it seems to be a problem in other settings.[15 37] Similarly to reports from other settings[16 38] and to RNs working in the same organisation (ie, SOS Alarm),[19] the interviewed EMDs experienced a lack of feedback, and any feedback sessions that do occur are usually initiated by the EMDs themselves, spurred by challenging calls. Feedback is known as an important feature for clinical improvement.[39] Consequently, more regular structured feedback should be incorporated throughout the daily work, including well-managed calls to provide positive feedback.

Experiences in the categories 'utilization of creativity in information gathering' and the 'constant evaluation of complex information' tie into the type I ('fast') and type II ('slow') decision making.[40 41] Even though the current study does not reveal EMDs clinical decision-making processes in detail and what role it plays in the management of calls, the results do point to an interpretive aspect in the EMDs decision-making process. This can be clearly recognised in the citations from the section on verbal and non-verbal communication, when the EMDs literally point out how quickly they make their decisions, and that they perceive this as positive. Although experience and training aim to enhance the type I decision-making, there is an inherent risk of premature closure, known as the failure to continue considering plausible alternatives after an initial assessment has been reached.[42 43] The lack of a systematic feedback for the decision made by EMDs may increase this risk. Further studies investigating the EMDs clinical decision-making, focusing on both the process and outcome, could potentially address these concerns.

Limitations

Four of the authors, with diverse insights into the research area and qualitative methodology, alternated as interviewers. This might have led to a varied consistency in the interviews conducted. To reduce this potential weakness, all four of the interviewers participated in the first four interviews and took part in a discussion of their reflections, supported by field notes, afterwards.

All of the EMDs who participated in the study were women, reflecting the predominance of female EMDs at SOS Alarm. Also, the study's method of recruitment did not allow an understanding of possible reasons for non-participation, and it is therefore conceivable that additional and/or different experiences could be revealed if male EMDs were to participate in future studies. Furthermore, although the interview guide reflects the Swedish system, we believe that the results are representative of how to manage the multifaceted, interactive task of emergency medical dispatching, that is, the dyadic communication, rather than reflective of the emergency medical dispatching system per se, and can therefore be transferable to other systems.

CONCLUSION

Managing emergency medical calls was experienced by EMDs to attentively manage a multifaceted interactive task. Core parts were described as: the ability to utilize creativity to gather information, continuously process and asses complex information, and engage in the professional role. Our results could be beneficial for emergency care managers when designing training programmes and organising EMD work and the EMD work environment, including further development of dispatch protocols and implementation of regular feedback sessions. Moreover, the results indicate

ORCID iDs
Klara Torlén Wennlund http://orcid.org/0000-0002-8433-7828
Katarina Bohm http://orcid.org/0000-0002-2680-0220

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