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ORIGINAL ARTICLE

# The ambulance nurse experiences of non-conveying patients

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## Abstract

**Aims and objectives:** To explore ambulance nurses' (ANs) experiences of non-conveying patients to alternate levels of care.

**Background:** Increases in ambulance utilisation and in the number of patients seeking ambulance care who do not require medical supervision or treatment during transport have led to increased nonconveyance (NC) and referral to other levels of care.

**Design:** A qualitative interview study was conducted using an inductive research approach.

**Methods:** The study was conducted in a region in the middle of Sweden during 2016–2017. Twenty nurses were recruited from the ambulance departments in the region. A conventional content analysis was used to analyse the interviews. The study followed the COREQ checklist.

**Results:** The ANs experienced NC as a complex and difficult task that carried a large amount of responsibility. They wanted to be professional, spend time with the patient and find the best solution for him or her. These needs conflicted with the ANs' desire to be available for assignments with a higher priority. The ANs could feel frustrated when they perceived that ambulance resources were being misused and when it was difficult to follow the NC guidelines.

**Conclusion:** If ANs are expected to nonconvey patients seeking ambulance care, they need a formal mandate, knowledge and access to primary health care.

**Relevance to clinical practice:** This study provides new knowledge regarding the work situation of ANs in relation to NC. These findings can guide future research and can be used by policymakers and ambulance organisations to highlight areas that need to evolve to improve patient care.

## KEYWORDS

ambulance nursing, care pathways, clinical decision-making, content analysis, experiences, health services research, nurse, qualitative study, refusal of care, self-care

## 1 | BACKGROUND

Ambulance care has undergone considerable changes in recent decades. Some of these changes are related to patient demographics

and the increasing number of patients seeking emergency care (Booker, Shaw, & Purdy, 2015; Hjalte, Suserud, Herlitz, & Karlberg, 2007a; Lowthian et al., 2011). To meet this growing and changing demand, some ambulance services have developed treat-and-release

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and referral protocols (Ebben et al., 2017; Snooks et al., 2005). The need for the ambulance service to consider and develop alternatives to ambulance transportation and emergency department attendance and admission is not a new issue (Snooks, Dale, Hartley-Sharpe, & Halter, 2004). The option of referring patients to different levels of care differs among ambulance organisations worldwide. Although some patients seek ambulance care without needing its resources, not all ambulance organisations allow referrals to other levels of care (Knapp, Kerns, Riley, & Powers, 2009). At the beginning, the emergency dispatcher assesses the call and assigns an ambulance response if it is deemed appropriate. When the ambulance arrives on scene, the patient's main complaint and the need for immediate treatment or transport to the emergency department are assessed.

Since 2005, Swedish legislation has stipulated that at least one registered nurse must be responsible for the patient and the care provided in the ambulance (Suserud, 2005). Swedish ambulances today are commonly staffed with a prehospital care specialist nurse who can collaborate with another registered nurse or an emergency medical technician (Tärnqvist et al., 2017). All nurses have 3 years of higher education and a bachelor's degree, and the specialist nurses have master's degrees in prehospital emergency care (Magnusson, Källenius, Knutsson, Herlitz, & Axelsson, 2016; Sjölin, Lindström, Hult, Ringsted, & Kurland, 2015). If the patient does not need ambulance care resources, some organisations allow their nurses to use NC guidelines to refer the patient to a more appropriate level of care (Knapp, Tsuchitani, Sheele, Prince, & Powers, 2009; Knapp, Kerns, et al., 2009).

The need for ANs to use nonconveyance (NC) has increased as ambulance utilisation and the proportion of patients unnecessarily seeking ambulance care have increased worldwide (van de Glind et al., 2016; Lowthian et al., 2011; O'Hara et al., 2015). Studies have shown that 16%–31% of patients utilising ambulance care were found to require no medical supervision or treatment during transport (Hjälte, Suserud, Herlitz, & Karlberg, 2007b; Newton, Tunn, Moses, Ratcliffe, & Mackway-Jones, 2014; Norberg, Wireklint Sundström, Christensson, Nyström, & Herlitz, 2015; Tohira et al., 2016a). Region-specific guidelines and triage systems have been developed both in Sweden (Vicente, Sjöstrand, Sundström, Svensson, & Castren, 2013) and internationally (Brown et al., 2014; Gray & Wardrope, 2007; Snooks et al., 2017). However, consensus and validated guidelines for NC are lacking both nationally and internationally (Ebben et al., 2017).

Ambulance nurses are trained for emergencies, but an increased demand for ambulance care has made it necessary to assess the patient's need for ambulance care and safely nonconvey them to another level of care. Ambulance nurses' perspectives regarding NC are unexplored. An understanding of and deeper insight into the practice of referring patients to alternate levels of care are needed to improve patient care and refer patients without acute care needs. Such practices might promote patient safety and ambulance availability.

### 1.1 | Aims and objectives

The aim of this study was to explore ambulance nurses' experiences of non-conveying patients to alternate levels of care.

### What does this paper contribute to the wider global clinical community?

- Nonconveyance is perceived as one of the most complex and high-responsibility tasks performed by the ambulance service.
- To promote the nonconveyance of patients who seek ambulance care, nurses need a formal mandate, knowledge, training and access to primary health care.
- Ambulance nurses experience frustration when they must attend a patient who does not require ambulance resources, and this might jeopardise patient safety and ambulance nurses' work satisfaction.

## 2 | METHODS

In this study, an ambulance nurse's decision to refer patients to a level of care other than ambulance care is defined as nonconveyance (NC). Patients may be nonconveyed to self-care at home or referred to primary care, the emergency department or another healthcare facility with or without alternate transport. This study is part of a larger project called Non-conveyance-Go to Other Level of Care (No-Go).

### 2.1 | Design

The design was a qualitative interview study with an inductive research approach. This exploratory research method aimed to obtain a variety of comprehensive descriptions of the nurses' experiences with NC. The study followed the COREQ checklist for reporting qualitative research (Smith et al., 2018; Tong, Sainsbury, & Craig, 2007).

### 2.2 | Setting

The setting was a region with three ambulance departments in the middle of Sweden. The region has a population of 295,000 living in small- to mid-sized cities and rural areas. Ambulance services in the region serve 28,000 patients per year, and approximately 10% are NC.

Nonconveyance guidelines were implemented in 2015, and all ambulance staff received information and education regarding these guidelines prior to their implementation. The region-specific NC guideline contains a structured patient interview and assessment of vital signs (pulse, blood pressure, saturation, breathing frequency, body temperature and alertness). To consider NC, the patient's vital signs must be within normal range, and past medical history information cannot contain any potentially serious illnesses or injuries. The patient must be able to understand information and must not require medical care or monitoring during transport. The patient must be able to wait without obvious risk of deterioration before potential

treatment or further assessment. A physician can be contacted for consultation. The AN can also assist NC patients by arranging for alternate transport and continued care (Figure 1). The patients receive a document that contains patient information, self-care advice and a plan for continued care. The assessment is documented in the medical record.

### 2.3 | Participants

All nurses with or without specialist education from the three ambulance departments in the region received an information letter about the study. From a total of 124 nurses in the region, 24 were selected through purposive sampling; they varied in age, sex, ambulance department, ambulance work experience and specialist nurse work experience (Table 1). Four nurses declined participation due to lack of time (three) and personal reasons (one). The final participants were sixteen specialist ambulance nurses and four registered nurses, of whom twelve worked mostly in a small city and the surrounding rural areas, and eight worked in a mid-sized city and the surrounding rural areas. All the nurses in this study, regardless of their academic degree, are referred to as ambulance nurses (ANs).

### 2.4 | Data collection

Twenty individual interviews were conducted in 2016–2017. The ANs could choose the time, day and place of the interview. The interviews were conducted by the last author in a secluded room at the University Health Care Research Center ( $n = 10$ ) or at the participant's preferred ambulance department ( $n = 9$ ) or his or her own home ( $n = 1$ ).

Data were collected through semi-structured interviews with open-ended questions. The questions from the interview guide were as follows: “Can you tell me what non-conveyance means to you as a nurse?”; “Can you tell me about a non-conveyance that you remember?”; “What thoughts and feelings arise when you refer patients to another level of care?”; and “Are there any other aspects of referral that you want to highlight?”. Examples of probing questions included

**TABLE 1** Characteristics of the study group

Variable	<i>n</i>	Mean (range)
Men/women	12/8	
Age	20	43 (26–62)
Registered nurse experience (years)	20	17 (1–42)
Specialist nurse experience (years)	16	6 (1–15)

“Can you expand on that?”; “Can you describe something more?”; and “Can you give an example?” The interviews were digitally recorded with a Dictaphone and sound recording equipment (Philips LFH9375). Field notes were not used. The participants had no further involvement after the interview and did not provide feedback on the findings. The interviews lasted between 19–38 min (average 29 min). No further interviews were considered necessary as the data quality and content were assessed as sufficient.

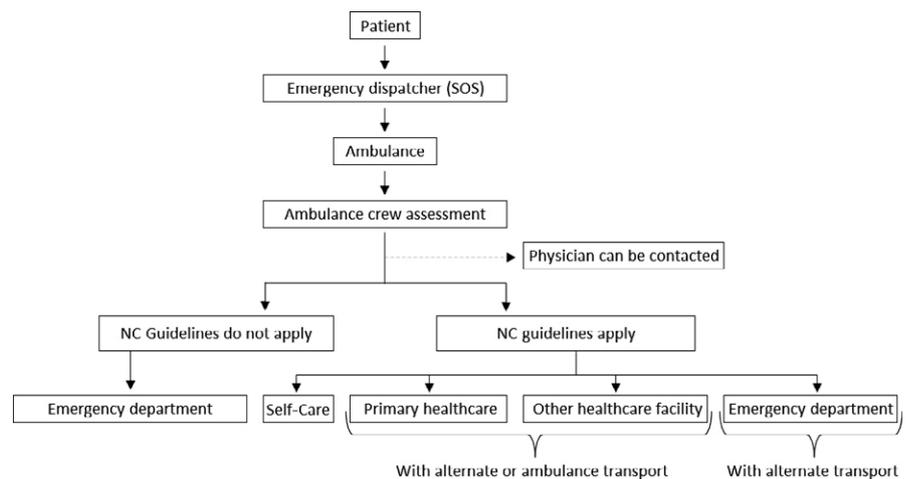
### 2.5 | Analysis

A conventional qualitative content analysis was conducted as described by Hsieh and Shannon (2005). All the researchers in the research group had previous experience in qualitative research, and they all had different knowledge and perspectives regarding ambulance care.

The interviews were transcribed verbatim. The first author compared the audio recordings to the transcripts to obtain the context of the entire interview, begin the internal analysis process and correct some ambiguous typing errors.

The interview transcripts and recordings were simultaneously read and listened to several times. The first author derived the manifest codes from the text by extracting the exact words that corresponded to the aim of the study. These codes were named with the exact words or sentences from the text. The codes were then sorted into more comprehensive labels. These labels were named using manifest words from the text. When all codes had been sorted under labels, the labels were analysed into meaningful clusters (sub-categories) and finally into categories. The development of the

**FIGURE 1** The NC process, as initiated by patients calling the emergency dispatcher and resulting in different referral options



categories and subcategories was the first step in a more interpretative process. The category and subcategory names and content were determined through discussion within the research group. This process iteratively compared the individual parts within the context of the whole body of data to find and describe the variations among the ANs' descriptions (Hsieh & Shannon, 2005). Citations were then identified and used to support the results and analysis. The coding process and analysis were accomplished using the NVivo 11 software. All the findings could be incorporated into the categories and subcategories.

### 3 | RESULTS

Two main categories, Doing what is right and Working in a headwind, and four subcategories (Table 2) emerged from the text addressing the ANs' experiences with NC and referring patients to other levels of care.

#### 3.1 | Doing what is right

The ANs described wanting to do both what was right and what felt right. Considering both the patient and themselves, the ANs expressed the need to make safe decisions and feel safe. The category Doing what is right comprised the subcategories *For the patient's best interest* and *Being professional*.

##### 3.1.1 | For the patient's best interest

It was important to reach an understanding with all individuals involved, including the patient, colleagues and possibly the patient's informal caregiver or relatives, to ensure that the patient understood the information and the reasons for being nonconveyed. The ANs thought that an agreement could be facilitated by engaging in a good dialogue, providing adequate time, listening and involving the patient in the decision. If a consensus was reached between the AN, the patient and the informal caregiver, the AN could feel more confident that NC was a good decision for the patient. When the non-conveyed patient was referred to the most appropriate level of care, the ANs felt that they had done something good for the patient:

...and then that you sort of in a good way kind of make them feel that they have received help, that we in no way feel that we are there unnecessarily but

that we get them to see things our way and that they understand that they will get better help somewhere else. (1)

Decisions regarding NC required time to provide appropriate care for the patient being assessed:

I don't see it as a problem, not at all, but every assignment has to take its own time, you don't need to spend time unnecessarily, but I don't see it as my responsibility to make sure there are ambulance units available for my assignment, that's so to speak to deal with patients and then I'll do it until I feel I've finished it. (5)

ANs who were stationed in rural areas wanted to avoid leaving these areas without available ambulance resources. Living far away from the hospital was considered a risk factor for receiving unequal care, and the ANs described non-conveying more patients when they were stationed in such areas:

...of course it affects just because you will be away there, you'll be away for hours, mmm eeh in case it would be mmm happen something so then. (10)

The ANs could feel divided between wanting what was best for the patient and the pressure of being available for a new assignment.

If the patient was fragile or had already waited a long time for the ambulance to arrive, the AN could forego the NC guidelines and transport the patient to the nearest emergency department to minimise the wait time.

##### 3.1.2 | Being professional

The quality of being professional included being aware of personal limitations, doing what was considered right and knowing when it was necessary to seek support. The ANs described understanding the reasons that patients and healthcare providers (such as nursing homes and primary care providers) contacted the ambulance service without needing its resources. The ANs felt a responsibility to keep ambulance resources available as such resources were limited:

But, also that the ambulances are used for the right things. And, then I mean those who really are acutely ill who need our help now. (1)

The ANs described the NC of patients as a demanding, complex and high-responsibility task and stated that to avoid the responsibility, extra workload and time constraints that they believed accompany NC tasks, they just transported patients to the emergency department. The ANs wondered whether NC was a task that the

**TABLE 2** Category and subcategory structure

Category	Subcategory
Doing what is right	For the patient's best interest
	Being professional
Working in a headwind	Aggravating circumstances
	Feeling exploited

ambulance service should even perform, and sometimes they considered transporting a patient who did not need ambulance care or emergency department services in an effort to prevent future calls or complaints from the patient:

It's better to bring them than to leave them at home because then at least no one can report you for that. (15)

It's actually easier to just load them on and drive them to the emergency room. (13)

At first, ANs perceived NC as an intimidating task, although it became easier with more experience. By following the guidelines and thoroughly documenting decisions, the ANs felt that the decisions would become more patient-safe. The structured protocol of NC emphasised the ANs' professional skills, which created a sense of pride. NC was considered an option and a tool that enhanced the feeling of being a professional AN. The ANs not only became accustomed to NC but also felt better prepared to assess patients' needs for acute care. They felt a need for more specific training in NC, which would enhance their confidence:

Nowadays, I'm quite comfortable because I've been doing it for a while, at first you're a bit anxious. I think you have, the threshold for referral is much higher, for me it was. In the beginning, because then you're a bit like this, do I really know what I'm doing? (11)

The ANs described the importance of approaching every patient equitably and overcoming inevitable preconceptions, knowing that this might affect the patients' assessment and care. The ANs emphasised that any dissenting opinions regarding the patient's needs and assessed level of care should be expressed before deciding on NC.

The ANs obtained support in their NC decisions from various sources, including ambulance crewmembers, management, NC guidelines, physicians, the patients and their informal caregivers. The ANs felt trusted when they were given the responsibility to make NC decisions, but simultaneously felt a need for collegial and organisational support to be content with their NC decisions. They described feeling safer when they had another AN present to share the decision-making responsibility. In particular, the utilisation of NC could be reduced if prior NC decisions were questioned by patients and management or if the ANs felt insecure or doubted that they would receive the necessary support from management or colleagues. The guidelines and documentation had the potential to create a sense of security that supported the AN's decision to use NC. If nothing negative transpired after NC, then the ANs assumed they had made the correct decision. Patients were transported to the emergency department if there was any doubt about their condition and prognosis or if the ANs mistrusted the guidelines' capacity to detect patients at risk of deterioration:

I probably feel that I really want to be sure of my facts when I make a referral, that I have to feel confident that it feels right and if I have the slightest gut feeling that this is not good then I trust it and take the patient with me. (1)

It was satisfying and reassuring for the ANs when they were able to arrange a medical appointment at the primary care centre (or at a clinic other than the emergency department) because in such cases, they knew that the patient would receive the necessary medical attention. The NC decision could also be finalised or transferred to a physician, which enhanced the feeling of having made a safe decision.

### 3.2 | Working in a headwind

The category Working in a headwind consisted of experiences characterised by the difficulty of non-conveying patients because of their misconceptions about the need for an ambulance. The ANs felt that the ambulance care resources were being misused in such cases. This category contains the subcategories *Aggravating circumstances* and *Feeling exploited*.

#### 3.2.1 | Aggravating circumstances

The ANs felt that both members of the public and other healthcare providers (such as primary healthcare personnel) lacked knowledge regarding ambulance utilisation criteria. This knowledge deficit could make the ANs' work more difficult as it resulted in the need for ANs to justify the NC decision to both the patient and other healthcare providers. It could also make it difficult for the AN to make an appointment for the patient with the primary healthcare provider.

The ANs stated NC can be hindered by deficient primary healthcare resources that are unable to accommodate patients for whom primary care is appropriate. Problems with either primary healthcare resources or the availability of a patient transport system that would arrive within a reasonable amount of time could prompt the use of ambulance transport or emergency department attendance.

When the emergency dispatcher prioritised a call as life threatening, NC could still occur when a patient did not require care interventions or medical monitoring during transport. The ANs could experience their NC decisions as difficult in situations in which they had rushed to the scene with flashing lights and sirens:

...think it's an adjustment also for us to go on a Priority-1 alarm, it becomes a bigger step to make a referral, you go there like at full speed with a blue light and then the patient actually feels not too bad, it's a big adaptation for us too then, that yes but you don't have to go in an ambulance, but you may not even have to go to the hospital. (1)

The ANs experienced situations in which they felt that the patients had contacted the ambulance service because of a lack of knowledge and information about common and harmless medical conditions. Patients were also thought to have made ambulance requests because they lacked a close friend or relative to ask for advice and therefore sought medical support and advice from the ambulance service. The ANs described how patients' family members might contact the ambulance services to relinquish the "burden" and responsibility of caring for the patient.

Some patients mistrusted the ANs' ability to make NC decisions and wanted a second opinion. The ANs also described that patients preferred to go to the hospital because they believed that the best physicians worked at the hospital and in the emergency department and not in the primary healthcare system:

They don't know we work like this and they think mmm maybe they may not get care or maybe get worse care for example, mmm mmm eeh many people equate the emergency department with better care than a health care center for example, mmm eeh but whether it's due to bad experiences or suchlike or if it's a general notion. (12)

### 3.2.2 | Feeling exploited

The ANs could feel frustration when there was a demand for ambulance resources without a need for resources of the ambulance or the competencies of its staff. It was frustrating for the ANs when NC took a long time or when the AN was not able to refer a patient he/she thought lacked the need for ambulance care. The ANs described how they sometimes could readily understand that the situation was inappropriate for ambulance care simply by reading the short alarm text from the dispatch centre that sent it:

Most often, I think you can identify the patients who will be referred. Yes, as soon as we get the alarm. Even there you can almost yes, see that, what, is that all? Mmmm, why are we going out for this one? (20)

The ANs experienced that patients used the ambulance services because they believed that arriving by ambulance would lead to faster and more highly prioritised care at the emergency department. Patients sometimes demanded to be transported to the emergency department. There were even stories of patients threatening the ambulance care crew if they did not get what they wanted. However, the ANs indicated that they had the strength to withstand this type of pressure:

...it has become more demanding so today people take it for granted that they will get immediate help for the condition that they feel they are having problems with, regardless of what it's all about (5)

## 4 | DISCUSSION

The ANs wanted to find the best solutions for the patients but sometimes felt frustrated when resources were misused because of misconceptions about the need for ambulance services. Misconceptions about the need for an ambulance, resource shortages, and the lack of specific training and formal mandates can make it more difficult to convey patients to other levels of care.

The findings of the present study are similar to those of O'Hara et al. (2015), which found that patients and other healthcare providers were unfamiliar with the criteria for requesting ambulance care, which resulted in decisions to seek ambulance resources without the need for treatment or monitoring during transport. The ANs in the present study could feel trusted by management when they were given the mandate and responsibility to convey patients, but they also felt frustration from their experiences with patients who demanded transportation and had the misconception that an ambulance transport would lead to faster and more highly prioritised care at the emergency department. Previous studies have found similar results (Land & Meredith, 2013; Unwin, Kinsman, & Rigby, 2016). It is possible that patients and other healthcare providers are unaware of the competencies and authority provided by the ambulance service (Booker et al., 2015; O'Hara et al., 2015) and therefore do not trust the ANs' abilities to use NC guidelines. The ANs felt frustrated not only when the ambulance service was misused for transportation purposes by patients and other healthcare providers but also when the emergency dispatcher inappropriately assigned the highest priority level. In Australia, only 5.8% of the assignments prioritised at the highest level were judged to be an emergency (Ball et al., 2016). In Sweden, 10% of all assignments were assessed as potentially life threatening, and 27% of the patients prioritised as primary healthcare candidates were found in the highest priority level (Hjälte et al., 2007a; Norberg et al., 2015). At present, more patients than ever present to ambulance services without a need for ambulance care (Barrientos & Holmberg, 2018; Weaver, Moore, Patterson, & Yealy, 2012). The discrepancy between dispatch priority and the ambulance service's on-scene assessment may make ANs lose trust in the prioritisation system, prompting them to start neglecting ambulance assignment priority level and underestimate patient care needs. Consensus regarding the need for an ambulance is lacking (Booker et al., 2015; Weaver et al., 2012), and ANs might have a different idea about what constitutes ambulance work than what they encounter in reality (Rosén, Persson, Rantala, & Behm, 2018). Therefore, the ANs perception regarding the need for an ambulance may need to be revised, the mission of the ambulance service may require more clarity, and assessment discrepancies between the ambulance and emergency dispatchers should be reduced. The emergency dispatch organisation needs to find a better solution for ambulance assignment prioritisation as the current discrepancies seem to create frustration and might strain the ambulance and acute care systems. Since 2015, other regions of Sweden have introduced an alternate model for medical emergency dispatch services (Spangler, 2017). Research is needed to evaluate the different types of medical

emergency dispatch systems in terms of their impact on ambulance availability and their ability to predict patients' required level of care.

For ambulance services to meet changing and growing demands, NC guidelines are being implemented. These guidelines have resulted in a shift from earlier practices in which patients were more frequently transported directly to the emergency department. The incorporation of NC guidelines provides ANs with greater power to decide the appropriate level of care for the patient, which makes the patient dependent and vulnerable (Holmberg, Wahlberg, Fagerberg, & Forslund, 2016). It is important to consider the patient's perspective seriously and bear in mind that they seek ambulance care because they perceive a need for assistance (Rantala, Ekwall, & Forsberg, 2016; Rantala, Forsberg, & Ekwall, 2017). The patient perspective is important, and studies are needed to understand how patients experience being nonconveyed and what this shift in power between ANs and patients means.

The ANs sometimes felt torn between the desire to be available for patients with a potentially greater need for care and devoting adequate time to finding the best solution for the current patient. According to Swedish legislation, the registered nurse has a responsibility to provide priority care to the patient with the greatest need (Socialdepartementet, 2017). The time aspect and its effect on ambulance availability when using NC guidelines remain unexplored. In particular, the ANs in the present study experienced the use of the NC guidelines as time-consuming and (Snooks, Kearsley, et al., 2004) found that job cycle time increased when using a treat-and-refer protocol. Therefore, when they were close to the hospital, the ANs sometimes chose to ignore the NC guidelines and just transport the patient to the emergency department, reasoning that doing so could make ambulance resources available for other assignments more quickly. Policymakers may need to decide what constitutes ambulance care as both ANs and Swedish legislation emphasise the need to take ambulance availability and readiness into consideration when caring for patients. It is known that increasing demand for and utilisation of ambulance resources can have a negative effect on accessibility, quality and safety aspects (Lowthian et al., 2011). Finding alternative modes of transportation for low-acuity patients has been described as a prioritised research area (Snooks et al., 2009; Weaver et al., 2012). A single responder unit (Magnusson et al., 2016) or special primary healthcare resources that attend to the low-acuity patients who currently seek assistance from the ambulance service might be more appropriate. The healthcare organisations may need to redistribute resources to relieve ambulance care of these low-acuity assignments and thereby increase the readiness and availability of ambulances.

Swedish healthcare legislation states that every patient should be treated equally and has the same access to care regardless of where they live (Socialdepartementet, 2017). When working at an ambulance station far from the hospital, the ANs considered the shortage of ambulance resources when making decisions regarding NC. Therefore, more patients were nonconveyed from remote areas as the ANs stationed there wanted to be available for other assignments. Patients who are transported from more remote areas have

been assessed as generally being more severely ill than patients in urban areas (Beillon, Suserud, Karlberg, & Herlitz, 2009). Research is inconclusive regarding whether ANs are capable of correctly determining the level of care a patient requires (Brown et al., 2009; Tohira et al., 2016b). Patient safety and the principle of equal care may be compromised if patients are treated differently depending on where they live.

This study indicated that there are shortcomings in specific NC training, which is in agreement with research showing that expectations and formal training focus on emergency response and training rather than on NC (Rosén et al., 2018). Experience is important for decision-making as it constitutes a qualitative difference from being a novice, which highlights the need for specific NC training (Gunnarsson & Stomberg, 2009; Smith et al., 2013). ANs need more training to facilitate the decision-making process and thereby make safer NC decisions.

The ANs in the present study perceived primary healthcare systems as having a lack of resources or being unwilling to handle primary healthcare requests from the ambulance service. Therefore, ANs sometimes conveyed patients who did not require ambulance transport to the emergency department. A similar conclusion was drawn in (Holmberg & Fagerberg, 2010; O'Hara et al., 2015), which indicated that the lack of alternative care pathways or community care resulted in ambulance transports to the emergency department. Deficient primary health care seems to be a problem for ANs who want to nonconvey patients to the most appropriate level of care. If ANs experience difficulties in non-conveying patients to other levels of care, it might undermine the use of NC guidelines. ANs might stop following the NC guidelines if they find that doing so takes too much time and effort, which will ultimately result in transporting patients by ambulance to the emergency department.

When the ambulance service provides specialist health assessments, advice, or potential treatment in the patient's home, or arranges primary care contact and facilitates the arrangement of a patient transport, there may be a risk of the emergency dispatch centre increasing its utilisation of the ambulance service as a resource for primary care assessments and care delivery. The ambulance service could also become an alternative for patients seeking healthcare assessments and faster healthcare contact in their own homes.

If the future of the ambulance service involves tending to more patients who do not require acute care, the authors emphasise that more specific training in NC is required and that NC guidelines must be validated to make this a patient-safe approach.

To our knowledge, no earlier studies have described ANs' experiences of NC since the incorporation of the NC guidelines. Future studies are necessary to understand how patients experience NC.

#### 4.1 | Methodological considerations

The analysis process was used to create a framework and facilitate future research concerning experiences of NC. This process enhances transferability and dependability as the result is presented

with as little interpretation as possible and with the support of quotations (Hsieh & Shannon, 2005; Lincoln & Guba, 1985). To enhance confirmability and credibility, the context, setting and procedure were described thoroughly. There was also an ongoing discussion among the authors in an attempt to minimise the first author's preconceptions regarding the experiences of NC (Lincoln & Guba, 1985).

## 4.2 | Limitations and strengths

There are several potential limitations to this study. The fact that a nurse conducted the interviews could have had a negative impact on the interviewees' willingness to share experiences that were incorrect from a professional nurse's point of view. At the same time, the participants may have found it easier to talk to an unfamiliar peer who knows and understands the context and professional language. In addition, the study was performed in only one region because no other region used the same NC guidelines. Despite these limitations, we believe that the results are credible as the research group was aware of these limitations and made thoughtful methodological choices, such as choosing interview subjects with a wide range of experiences, using a semi-structured interview guide and allowing the interview subjects to determine the time and place of the interviews.

Another strength of this study was the different knowledge bases and perspectives concerning ambulance care within the research group. Given that the interviewer was experienced, the interviewees received the same questions and understood the questions being asked. The interviews were considered to be rich in content.

## 5 | CONCLUSION

This study indicates that NC is perceived as one of the most complex and high-responsibility tasks performed by the ambulance service. To nonconvey patients seeking ambulance care, nurses need a formal mandate, knowledge, training and easier access to primary health care. Improving these aspects may facilitate patients' access to a more appropriate level of care. The current discrepancies between emergency dispatch prioritisation and ANs' on-scene assessments can cause frustration that might jeopardise patient safety. Decision-makers must determine the appropriate use of ambulance services and clearly communicate this to the ambulance organisation, other healthcare providers and the public.

## 6 | RELEVANCE TO CLINICAL PRACTICE

This study provides new knowledge regarding the work situation of ANs in relation to NC. It highlights a structural problem within the ambulance organisation, namely the limited resources within the

primary healthcare sector and the emergency dispatch centre regarding triage, which causes frustration and limits ambulance availability. This new knowledge is especially important for decision-makers as it points to organisational factors that hinder the referral process and thus contribute to the misuse of ambulance services and the over-crowding of emergency departments.

The findings of this study can guide future research and can be used by ambulance organisations and policymakers to highlight areas that need to evolve to improve patient care and tailor future educational efforts regarding NC and ambulance referrals.

Future research is needed to investigate patient safety aspects related to the accuracy of the nonconvey system and to explore whether patients experience adverse events and end up as emergency cases after being nonconveyed.

## ETHICAL CONSIDERATIONS

Written informed consent was received before the interviews. This study follows the ethical principles of the Helsinki Declaration (WMA, 2013) and received ethical approval from the regional review board in Uppsala, Sweden, Dnr: 2015/465.

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## CONTRIBUTION

Study design: EH, AS, MM, MAH, EON; data analysis: EH, AS, EON and manuscript preparation: EH, AS, MM, MAH, EON.

## CONFLICT OF INTEREST

The authors declare no conflict of interest.

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