

# Registered Nurses' Views on Telephone Nursing for Patients with Respiratory Tract Infections in Primary Health Care – Everyday Challenges and Insufficient Support

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## Research article

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# Abstract

**Background:** Triage by registered nurses (RN) during office hours may be of great importance for the prescription of antibiotics according to guidelines. This, however, has hardly ever been the focus of scientific study. The aim of this study was to describe RNs' views on telephone consulting work with patients calling primary health care centers for respiratory tract infections.

**Methods:** A descriptive and qualitative study was performed through interviews with twelve RNs in Sweden.

**Results:** The RNs saw their daily work as a continuous challenge and reported that support structures were insufficient. The themes challenge and support were built on five categories. These were: the triage, assessment over the phone and to manage expectations, evidence-based knowledge and professional collaboration. The RN had to differentiate urgent cases from self-care advice, with a fear of maybe missing something serious. They described the difficulties in assessing both the symptoms and the person calling, relying only on what they were told, as well as managing patients' expectations with special reference to patients with other cultural backgrounds. The RN described insufficient possibilities to keep up with an evidence-based knowledge, where decision support and guidelines were only partly known and used, while continuous medical education was not prioritized. Furthermore, professional collaboration was described as unstructured.

**Conclusions:** The telephone triage in primary care health centres regarding common problems seems to be an invisible task, both for researchers, policy makers and the RNs themselves. The consequences may be decreased patient safety, occupational stress, and an increased workload for the RNs. Systematic work is needed to strengthen the different support structures.

## Introduction

Primary care in the Western world faces enormous challenges (1, 2). There is an increased demand for easy access as well as an increased number of patients with chronic and complex problems, as well as difficulties to recruit general practitioners (GPs). One solution suggested to these problems is the introduction of telephone triage by registered nurses (RNs) to reduce the numbers of face-to-face contacts and out-of-hours visits by GPs (3).

Sweden has a long tradition of RN-made telephone triage in primary healthcare. When primary care expanded in the 1970ies, there was a scarcity of GPs in Sweden. Thus, RNs' telephone triage became a central part of the primary healthcare system. Today, patients are encouraged to call RNs at the healthcare centre, who assess problems, give self-care advice or recommend GP appointments. Also 'drop in' appointments at the primary healthcare centres (PHCCs) are often available, where RNs first decide whether the callers need a GP appointment or not. Most RNs working in primary healthcare in Sweden have a specialist education, e.g. district nursing, with their own surgery in the PHCC. Besides, they usually also have special assignments, e.g. child healthcare, diabetic, asthma/COPD surgeries or health-

promoting appointments. In Sweden, healthcare is publicly financed, and telephone calls to RNs are free of charge. GPs and RNs are salary paid and work in group practices. In addition to the telephone nursing during office hours at the PHCCs, a national service, Swedish healthcare direct, offers telephone nursing around the clock (10).

Infections are common causes for primary healthcare contacts all over Europe, accounting for around 30% of all visits to a GP in Sweden, whereof respiratory tract infection (RTI) constitutes around 60% (4). At just under half of these GP visits, RTI patients are prescribed antibiotics. Problems concerning RTI constitute a major part of the calls for telephone triage out of hours (5). National guidelines for management of common infections have been in place in Sweden for 20 years, as well as a national web-based decision support tool (DST) available to aid RN assessment of callers' health problem urgency. The DST is updated on a regular basis in line with current guidelines.

Results from an earlier study have implied that RN triage at the PHCCs during office hours may be of great importance for the prescription of antibiotics according to guidelines (6). Most RTIs are self-healing, where proper advice for self-care is the best option (7, 8). At the same time, callers who would benefit from antibiotic treatment and those with signs of a serious disease must be identified for appropriate action. Thus, a well-functioning telephone triage for callers with RTI is both important and challenging. Earlier studies have suggested that DST, guidelines, local routines, continuous medical education (CME), as well as well-functioning cooperation and feedback may facilitate adequate assessment (6, 9).

Most research has examined the use of telephone triage in an out-of-hours context (3, 10–13). However, what is valid for a PHCC context is unknown and needs to be studied. Therefore, the aim of this study is to describe RNs views of telephone nursing work with callers to PHCC for respiratory tract infections.

## **Method**

### **Study Design**

This is a descriptive and qualitative interview study. Data was collected through semi structured interviews with open-ended questions to stimulate the RN respondents own narratives (14). The interviews were recorded with electronic devices and transcribed verbatim by an experienced secretary. The interviews were open and contained questions on triage, appointment bookings as well as how callers' medical problems and needs could be met and managed, among other issues. Moreover, the interview guide included questions concerning local guidelines and routines, collaboration with the GP and continued medical education (CME). Follow-up questions were asked to gain a deeper understanding.

### **Study population**

A strategic sample of RNs, working at eight PHCCs in southern and mid-Sweden, who work daily with telephone triage, were invited to participate in the study. The RN interview study is part of an earlier

project, involving the chosen PHCCs carried out in 2015 (6). The time the RNs worked with telephone triage varied between and within PHCCs.

Initially, every third interview of the 26 interviews was read by the five authors. In addition, three interviews were strategically chosen to secure representation from urban and rural areas and PHCCs with high and low antibiotic prescribing. In the last added three interviews, no new categories were found.

Table 1  
Description of characteristics of the interviewed RNs. n = 12

<b>Age of the interviewed RNs median (range)</b>	<b>48.5 (32–65)</b>
Specialized district nurse (number)	11
Work experience, years in a PHCC median (range)	14.5 (4–25)
Working at a PHCC in urban areas (number)	4
Working at a PHCC with antibiotic prescription above average (number)	5

## Data analysis

Qualitative content analysis with an inductive approach was carried out according to Graneheim and Lundman (15). The analysis was performed in a number of steps. First, interview data was read several times to catch the overall meaning. Meaningful units that corresponded to the study aim were then identified and selected from the text. Next, these meaningful units were condensed to a reduced description, i.e. the manifested content, as well as an interpretation of the underlying meaning, i.e. the latent content. The text units were then condensed and coded and finally put together into different categories. All authors analysed the text, independent of each other. The different steps of the analysis were discussed until consensus was reached. An example of the analysis process is shown in Table 2.

Table 2  
Example of the analysis process.

Meaningful unit	Condensation	Code	Subcategory
So my job in the triage is to distinguish what is like...who comes here and what should be self-care, and of what is coming here, what could be something that is more serious?	My job in the triage is to distinguish what is self-care, and what could be something more serious	Assess the level of care	Distinguish self-care need from more serious cases

## Ethics

The study followed the ethical regulations and guidelines according to the Swedish law (16) and conformed to the ethical principles defined in the World Medical Association Declaration of Helsinki (17). All the interviewed RNs gave their consent to participate after being informed about the study, that their

participation was voluntary and that they could withdraw from the study at any time. The participants were guaranteed confidentiality.

The research material, the recorded and transcribed interviews, is stored on the researcher's computer, which is password protected, on the Region Kronoberg server with password protected only by logon. Only major researchers have access to recordings. During the analysis, all decoded data was stored on the county's respective university's servers. Only participating researchers had access to the printed material during the analysis. All original material is saved for at least 10 years.

## Results

Two themes and five categories emerged from the data regarding RN views of telephone nursing work with callers to PHCC regarding respiratory tract infections.

The themes and categories are presented in Table 3. Representative quotes are presented in italics and the interview numbers are presented in brackets.

Table 3

Main categories and themes for RN views of their telephone nursing work with callers to PHCCs for respiratory tract infections (RTI).

Categories	Themes
The triage	Challenge
Assessment over the phone	
Manage expectations	
Evidence-based knowledge	Support
Professional collaboration	

## Challenge

This theme contained three categories: The triage, Assessment over the phone, Manage expectations

### The Triage

The risk for misunderstanding in the communication between the RN and the caller or that the advice given is misunderstood was a challenge for the RN. They emphasized the necessity to have a thorough medical history. Based on the answers, the RNs tried to make an adequate assessment for triage and advice. The need for sensitivity and experience, as well as medical knowledge were suggested to facilitate interpretation and assessment of the caller's condition over the telephone. The RNs were well

aware of the risk of telephone triage and the importance of asking the right questions to understand if the person could make do with self-care advice, should get an appointment with a GP at once or could wait a few days to see the GP. In this respect, the RN functioned as a gatekeeper.

"So my job in the triage is to distinguish what is like...what comes here and what should be self-care, and of what is coming here, what could be something that is more serious? " (interview 3)

During the telephone consultation, the RN asked the callers about symptoms to try to find possible explanations to the symptoms.

The RN sometimes made a probabilistic assessment for a diagnosis as well as considering serious other diagnoses. The fear that they could miss a serious disease was also a challenge for the RN. Several RNs described how they thought about other possible underlying causes besides an infection when they were told about a cough, for example. When advice was given, the callers were prompted to call again if the symptoms did not disappear.

"Well, all breathing problems and everything, and you would think...yes, it is pulmonary embolism and... these rapid ones, but it's a cough, there are usually some breathing problems then....mm. Yes, I am very generous by saying they can get in touch in case of any small worsening. "

(interview 6)

In the telephone consultations, the RNs said they expected to give safe and evidence-based advice to the callers. Most of them stated that they valued their work with self-care advice, since they found many respiratory tract infections self-healing and they wanted to help callers avoid unnecessary medication with antibiotics. The RNs also mentioned callers who knew about not using antibiotics unnecessarily and who did not ask for medication. According to the RNs, the number of callers with this attitude had increased.

"If you kind of explain what it is...then I think people in general are very good about the fact that you should not take antibiotics unnecessarily, they don't really nag you"

(interview 3)

## **Assessment over the Phone**

During the telephone calls, the RNs tried to get a picture of who the person calling was. They wanted to figure out if they knew the caller and whether the description of symptoms was adequate. It was argued to be important for the RNs to pay attention to implicit cues. Some callers were reported to have described their symptoms in detail and perhaps exaggerated them in order to get an appointment with the GP, while others only provided brief information and played down how serious their symptoms were. Being unable to see the callers and have to rely on their verbal information increased the difficulty and the challenge, according to the RNs.

"Yes, it is basically difficult to sit here and make an assessment. Some say well, they are not very sick, and some are very sick, though they may not seem to be very sick, so it is....I think it is basically difficult. Because you can get tricked by those who say, well, it's not so bad...yes. But they are in fact sick. "

(Interview 7)

Due to the lack of observable signs during the call, RNs had to rely on what they heard; for example apart from the callers' descriptions of their breathing problems, the RNs tried to listen to the callers' breathing. In some PHCCs, the RN could, when uncertain, offer a face-to-face consultation in the RNs' clinic. They could also ask a GP at the PHCC for advice when they felt uncertain.

"That's what we do, in dubious cases we can...have the possibility to get them over here in some way and make an assessment....then you are able to see their skin colour and lots of other things. " (Interview 4)

The RNs experienced that telephone triage with parents to sick children was the most difficult situations in terms of making an assessment. The RNs felt uncertain and incompetent and they were therefore afraid of making mistakes. It was difficult to get a clear picture as to the degree of the child's illness. The RNs were worried that the child could have a serious problem, and were therefore generous in booking GP appointments for children, rather than giving self-care advice, although the GPs were already fully booked.

"But I think that I am probably a bit uncertain there, when it comes to small children, so I may more often give them an appointment with the doctor, as I feel that I cannot sort it out over the phone when it comes to children. " (interview 13)

Parental wishes to get a consultation with a GP for their child only rarely included a wish to get antibiotics. It was just equally important to comfort the parents, according to some RNs. These felt that many parents found it comforting to get an assessment by the RN when the child was ill.

"Yes, at least with parents and their children, I may feel, when they... with the ears then, that they say that you don't need antibiotics treatment and it's nice not to have to give their children antibiotics, and the parents think so too, and it's very trying to do it, and of course you don't want to give the children medication they don't need. " (interview 1)

"Yes, sometimes you think that....bring the children here a bit because, like,...the parents will calm down. " (interview 6)

## **Managing Expectation**

The RNs were challenged by the fact that some callers were impatient and wanted help and cure at once. Already before calling they had decided that they would ask for a laboratory test, a GP appointment or antibiotics. Most of these demanding person were reported to be young, gainfully employed or persons on their way to a holiday resort. The RNs said that these people were not susceptible to advice.

"But I don't think they are sick enough to be brought in..... Yes, I think....if for example it's someone who does not seem very sick, but...they still want to see a doctor because they want to get well quickly as they will be travelling abroad, etc. and it's like this...they want penicillin so they get well right away, that's what they think. " (interview 1)

The RNs tried to handle the callers' expectations by explaining the reasons for the symptoms and whether a GP appointment was necessary or not. At the same time, the RNs underlined their ambition to satisfy the callers, comfort them and make them feel listened to. When RNs were unable to meet these expectations, as well as expectations to get antibiotics, the RNs sometimes felt forced to give them a GP appointment, even though this was not in line with the common routines. This delayed the discussion of the callers' symptoms with the GP.

"Well, the important thing is to make them feel...listened to and they are pleased and they don't hang up and are dissatisfied or worried or whatever, but you try to satisfy them, that's what I feel is important. " (interview 11)

The RNs underlined the importance to understand and consider cultural aspects. Depending on the callers' cultural background, some had other expectations than the 'normal caller' regarding healthcare, e.g. other traditions regarding self-care advice or the use of antibiotics. In these cases, the ambition of the RNs to give self-advice was often not comprehended.

"It's a cultural thing, and therefore it's difficult to give self-care advice, as they don't want to understand that, no, and it's about seeing a doctor, it's something within them." (interview 5)

## Support

This main category contained the categories evidence-based knowledge and professional collaboration.

## Evidence-Based Knowledge

When it came to the RNs' relationship to and use of guidelines and DST, the mediators for evidence knowledge, the picture varied. Some RNs had access to, and used, the available DST. Others knew about it, but did not use it. Some RNs had not heard of the DST. Some said that they sometimes read the guidelines, while others kept them in mind.

"I have them (the guidelines) memorised, I ask questions and then...if I need to read up on it, I look it up and leaf through it..." (interview 3)

The possibilities of CME regarding infectious diseases varied. Some RNs had taken part in occasional educational activities, while other RNs said they were regularly being informed. The opinion was that the GPs were offered more opportunities for CME.

Some RNs said that they, themselves, did not prioritize education on infectious diseases, but rather chose to participate in education in the field of their special responsibility, such as diabetes or smoke cessation.

"Yes, exactly, that I have chosen other things, yes. I guess it feels like the others have also prioritised other things. Because it feels more like....this is more for the doctors...but it's also very important to us, but....the fact that we have chosen to do things [education] that are for us to do, redressing a wound and....yes, diabetes, smoking cessation, things like that....but of course one would like to do that as well" (interview 10)

## Professional Collaboration

When guidelines were incorporated into local routines, and were unambiguous and well known to most of the personnel at the health centre, the RNs said that work was easier for everyone. They also confirmed that they knew why and with what objectives a certain measure was taken. When routines for management of infectious symptoms were missing, some RNs reported that they tried to figure out what to do in order to facilitate for the individual GP to e.g. take a test before the GP consultation even if this may not be necessary.

"You....will then put the doctor in sort of an awkward position, ... they may not at all make the same assessment...you see....I make a different... Of course, to me it would be easier to send all of them to the lab and take a "near patient test" before I....you see...for me that's the easiest. " (interview 3)

The RNs were often unsure of their assessment of the caller, with whom they had talked to over the phone and booked a GP consultation. Due to this, they wanted to get feedback to learn for the future. This was managed in several different ways by the interviewed RNs. Some of them used to read the medical records afterwards, to find out how the GP had assessed the patient symptoms. No RN expressed having received feedback from a GP in a systematic way. Instead, this would mostly happen on the initiative of the RNs, who asked the GP in question for feedback.

"But sometimes you can go back in the records if you have a moment to spare and see what the doctor then wrote in the medical records. And what happened, I don't need to speak to the doctor directly, as I can read it myself. That's what you can do. So that's a development. " (interview 5)

"And we try to tell the doctors that they are welcome to give us feedback about our bookings [of a time to see a doctor], so we can see if that was right or wrong." (interview 5)

When the RNs were uncertain and wanted advice from a GP about individual callers over the phone, or in their own clinic, they had to 'disturb' the GPs in their work. Thus, this was a mutual problem for both RNs and GPs. The RNs stated that they had learned what GPs they could contact .

"No, let's do it while they are still here (at the nurse's clinic) and go see the doctor and discuss it, what will we do now, what do you think. Then, we always get a reply, it's never a problem to disturb them. " (interview 7)

The RNs highlighted the lack of a forum for joint discussions between RN colleagues, concerning assessment and management of different infectious disease symptoms. The RNs sometimes felt alone

(abandoned) when making their assessment over the phone. Many of them lacked support and help from their colleagues and wanted mutual information recommendations to use with the callers. The RNs reported that they had few opportunities for discussing with someone when they were uncertain. Hence, RNs' unpaid lunch breaks were sometimes used for collegial support.

"But sometimes you feel, maybe, that you should need to meet, maybe just the nurses, and have a discussion so we are saying the same thing on the phone, you know. A bit more than we are doing at the moment. " (interview 2)

At the PHCCs where opportunities for common discussions were lacking, the RNs expressed a need for this. However, some PHCCs had regular meetings for RNs, as well as well functioning collegial support, where the management of individual callers or patients could be discussed.

"I think...I guess generally...that we are talking to each other, the nurses.

Yes, we do. Yes....[laughing].....during our lunch." "Now, I have had that... in the triage and imagine that... this child had been sick for two days, like, and the mother is coming...." yes, we can take up different things, what we will do. Yes, we communicate with each other, what did you do then." (interview 2)

## Discussion

### Main Summary

This interview study, describing RN views on telephone nursing work with callers to the PHCC, reveals that RNs view their daily work as a continuous challenge and that supporting structures are insufficient. The themes challenge and support were built on five categories. These were: the triage, assessment over the phone and to manage expectations, evidence-based knowledge and professional collaboration. In the telephone triage, RNs had to differentiate urgent problems from what could be handled through self-care advice, always with a fear of missing something serious. This was expressed with the vulnerability of small children into mind. RNs also acknowledged the importance of self-advice and comfort for callers. They highlighted the need to explore both the medical problem and who the caller was as a person, heavily relying only of what they heard. Furthermore, RNs expressed having to cope with patient expectations, which were especially challenging when communicating with patients with other cultural backgrounds. The RNs also described their lack of enough possibilities to keep up with evidence-based knowledge. DST and guidelines were only partly known and used, and CME was not always prioritized. Moreover, professional collaboration was described as unstructured with deficient local routines, feedback from the GPs and support from colleagues.

Recent studies of RN triage during office hours in primary care confirmed a decrease in face-to-face contacts with the GPs, but not a decrease in total clinical contacts (18). The dual roles of the RN as care providers and gatekeepers is a challenge that is evident at the Swedish PHCCs (19). In Swedish primary care, telephone triage has long been an obligatory step to get a GP appointment. The available slots for

booking are scarce, appointments are fewer and consultation times longer than in most European countries (20). The RNs must balance the risk of missing a serious disease against taking responsibility also for the GP workload.

When the RNs assessed the patient's problem as self-health they tried to give self-care advice to avoid unnecessary GP consultations and prescriptions for antibiotics. This is in line with earlier studies, which report that telephone RNs want to support, coach and educate the callers (21). When dealing with children the RNs said that they lowered their threshold for allowing GP appointments. Second hand consultations, which are common in paediatric health calls (5), entail further difficulties in assessing the situation (22). Comforting parents was described as important as curing, well in line with earlier studies (21, 23).

RN telephone triage has probably made a crucial contribution to the decrease the antibiotics prescriptions in Sweden (6, 24) and is in line with the principle in Swedish healthcare that self-healing problems should be managed by self-advice from RNs in order to empower the patient and reduce healthcare utilisation. This has been possible in a healthcare system that is financed from taxes, with well-educated RNs and salary paid GPs. However, the RNs described the difficulties for people from other cultural backgrounds to adapt to the Swedish system. Surprisingly enough, no one mentioned the use of patient information on the national website 1177 (26) or from the Public Health Agency of Sweden (25), which is available in several languages.

The challenges the RNs reported that they experienced in telephone triage regarding the need to assess both who the calling person is and the problem, due to relying only on what was heard, and how these two tasks are interrelated in an intricate way, is in line with earlier studies (27). Thus, training and communication skills seem just as important as knowledge of the different guidelines for RTI (28). The importance of communication skill is argued by several studies where communication training of GPs decreased antibiotics prescriptions for patients with RTI (29). In order to respond to the expressed RN needs for educational efforts on telephone triage, CME activities could integrate communication skill with medical knowledge.

Likewise, medical knowledge seems just as important as the communication skills. The RNs described how they thought of different diagnoses, especially concerning callers with a cough. This is in contrast to earlier studies from interviews with RNs working at Swedish Healthcare Direct (21). Perhaps this difference is due to cooperation with GPs at the PHCCs who mostly explain symptoms in terms of one diagnosis and other diagnoses.

Updated evidence knowledge is crucial for RN assessment of the callers' problems. The RN use of DST and guidelines was inconsistent among the interviewed RNs. The national guidelines are implemented through out-reach visits in the health centres, both to GPs and RNs. However, the guidelines are developed by physicians and focused on diagnosis and treatment. Thus, the guidelines seldom elaborate on factors for telephone triage. The modest participation of RNs in creating the guidelines is astounding in a country with long traditions of RN led telephone triage in primary healthcare, and where RN telephone triage is mostly a prerequisite for getting a GP appointment. The national DST is designed for RN triage and is

regularly updated to correspond to current guidelines. A more consistent use of DST thus might facilitate shared PHCC routines and teamwork between GPs and RNs.

Most RNs lacked systematic CME at the PHCC for common infections, such as RTI. Instead, when offered, the RNs often prioritized CME in their special assignments. In contrast to RNs' work at Swedish Healthcare Direct, the interviewed nurses had mostly chosen to work at the PHCC because of the possibility to work face-to-face with their own patients. Telephone triage was not something they had chosen as their main duty, but rather as an imposed compulsion. Thus, CME for these common problems had lower priority, both at the organizational and the individual level, at the time of the study. It seems that knowledge and competence regarding the most common problems in telephone triage, where RN self-advice is crucial, is taken for granted. Thus, a proper introduction and preparatory training when the RNs are employed at a PHCC, seems to be an urgent measure that should be established.

All RNs participating in the study asked for feedback on their telephone nursing work from the GPs, but no one had experienced this in a systematic way. Several reviews emphasize well-functioning inter professional cooperation as the key to knowledge translation and evidence-based practice (30, 31). In many countries, RNs and GPs work together but the role and function of RN work varies from one country to another (32). Close cooperation between RNs and GPs can facilitate feedback. This is more easily organised at PHCCs, where both professions work together, in contrast to Swedish Healthcare Direct, which only employs RNs. A fruitful collaboration builds on mutual professional respect and trust, based on professional competence (33, 34). In this respect, the prerequisites are good in Sweden, which has well-educated RNs. However, this study demonstrates that the RNs had to ask for feedback in order to receive this. Lack of response on performed work may increase feelings of insufficiency and abandonment regarding their work.

The RNs not only wanted feedback from the GPs, but also asked for possibilities of support from colleagues and time for discussions within their own profession. These activities could decrease occupational stress and reduce the feeling of being alone in the telephone triage (35). At a PHCC with an open work climate, this could be rather easily organised by the RN professionals themselves.

RN telephone triage in the Swedish primary healthcare has been crucial and well established for many years, however rarely researched. This is one of a few studies exploring telephone triage within PHCCs both internationally and in Sweden. It is thus a valuable contribution to the research on telephone triage out-of-hours (10). Experiences may therefore also be important to other countries when establishing a similar organisation, even though differences in healthcare systems must be taken into account.

The interviews were carried out as part of an earlier study where the aim was to explore factors important for antibiotics prescription (6). Thus, the focus did not include the wider perspective on the RN work in telephone-like workloads, work environment and the overall experience of the work in telephone triage. There was no RN in the initial research group and perhaps the interview guide had been different if this was the case. Moreover, the different interviewers had different pre-understandings of the work in primary care, which may have had a negative impact on the communication.

The purpose of qualitative content analysis is to acquire both knowledge and an understanding of the phenomenon studied (15). As we set out to identify variations with regard to differences and similarities of a text, content analysis with an inductive approach was selected. Graneheim and Lundman highlight the importance of communication for the interpretation as one of the characteristics of content analysis (15). Texts based on interviews are formulated through interaction between the respondent and the person conducting the interview. The analysis is an unprejudiced description of the variations by identifying differences and similarities in the text, and they are expressed in categories and themes where context is very essential.

## **Conclusion**

In this interview study, which is one of very few performed on telephone nursing at PHCCs, the RN telephone nursing work was described as a challenge and the supporting structures as insufficient. The themes challenge and support were built on five categories. These were: the triage, assessment over the phone and to manage expectations, evidence-based knowledge and professional collaboration. The telephone triage for common problems at PHCCs seems to be an invisible task, both for researchers, policy makers and the RNs themselves. The consequences may be reduced patient safety, increased occupational stress, and an increased workload for the RNs. Systematic work is needed in order to strengthen the different supporting structures.

## **Declarations**

### **Ethics approval and consent to participate**

The study conforms to the principles outlined in the Declaration of Helsinki and was approved by the Regional Ethical Review Board in Lund, Sweden (2013/679). Participation was voluntary. All participants in the different data sources gave their written informed consent to participate by replying to a written invitation. All data were treated confidentially and could not be traced to any named person.

### **Consent of publication**

Not applicable. The manuscript does not contain any individual person's data.

### **Availability of data and material**

Since sharing of data was not included in the approval from the ethics committee or the informed consent from participants, data will not be made public.

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## Competing interests

The authors declare that they have no competing interest.

## Authors' contributions

The study was designed by MA and KH and they participated as interviewers. The initial deductive data analysis was done by LA and used as validation of the analysis carried out by IE, MA and KH. The final data analysis of the interviews was discussed and consented to by all authors. A first draft of the article was developed by IE and MA. All authors then contributed to the manuscript, and finalized it together. All authors have read and approved the final manuscript.

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