

# BMJ Open Working conditions in primary healthcare during the COVID-19 pandemic: an interview study with physicians in Sweden

Hanna Fernemark <sup>1,2</sup>, Janna Skagerström,<sup>3</sup> Ida Seing,<sup>4</sup> Maria Hårdstedt,<sup>5,6</sup> Kristina Schildmeijer <sup>7</sup>, Per Nilsen<sup>1</sup>

**To cite:** Fernemark H, Skagerström J, Seing I, *et al.* Working conditions in primary healthcare during the COVID-19 pandemic: an interview study with physicians in Sweden. *BMJ Open* 2022;**12**:e055035. doi:10.1136/bmjopen-2021-055035

► Prepublication history for this paper is available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2021-055035>).

Received 02 July 2021  
Accepted 26 January 2022



© Author(s) (or their employer(s)) 2022. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

For numbered affiliations see end of article.

## Correspondence to

Dr Hanna Fernemark;  
Hanna.fernemark@liu.se

## ABSTRACT

**Objective** The aim of this study was to explore how the COVID-19 pandemic changed the working conditions of physicians in Swedish primary healthcare.

**Design** This is a descriptive, qualitative study with individual semistructured interviews. Data were analysed using inductive content analysis.

**Setting** Swedish primary healthcare units in both rural and urban areas.

**Participants** A total of 11 primary care physicians fulfilled participation.

**Results** Two main categories emerged: 'work organisation and routines' and 'psychosocial work environment', containing three and five subcategories, respectively. The pandemic enforced changes in work organisation and routines. Increased flexibility, including more patient-oriented delivery of care, and novel means of interorganisational and intraorganisational interactions were perceived as positive by physicians. The pandemic also caused several changes in physicians' psychosocial work environment. Increased workload, information overload, as well as ethical considerations and feelings of uncertainty made the work environment stressful for physicians.

**Conclusions** The COVID-19 pandemic affected the working conditions of physicians in Swedish primary healthcare in numerous ways. The pandemic enforced changes in work organisation and routines for physicians in primary healthcare. Further research is needed to investigate how the pandemic will affect primary healthcare in the longer term. Learning from the pandemic is important because this will not be the last crisis that primary care and its healthcare professionals will face.

## INTRODUCTION

COVID-19 has had an enormous impact on healthcare systems worldwide, with crowded wards and intensive care units.<sup>1 2</sup> The spread of COVID-19 has required measures such as closing of borders, self-quarantining and social distancing.<sup>3</sup> The pandemic has also prompted many changes in organisational processes and working routines in healthcare and has had an impact on the work

## Strengths and limitations of this study

- To our knowledge, this is the first study on the effects of COVID-19 on the working conditions of primary healthcare physicians in Sweden.
- A multidisciplinary research team conducted the study.
- The small number of participants (N=11) could be considered a limitation.
- Participation was based on physicians' interest in the subject, which can affect the results.

environment in the healthcare sector.<sup>4</sup> For many healthcare workers, the pandemic has led to increased psychological distress. Healthcare workers have had to continuously assimilate new information and guidelines.<sup>5–8</sup> In addition, insufficient personal protective equipment has had a negative effect on the work environment.<sup>4 9 10</sup>

The media focus during the pandemic has been on healthcare workers in intensive care units and emergency rooms.<sup>8 11–13</sup> However, only a small proportion of patients with COVID-19 are hospitalised. Primary healthcare has managed the largest share of COVID-19-related care.<sup>1</sup> Primary healthcare handled patients infected with, or potentially infected with, the coronavirus and carried out extensive testing for COVID-19 among citizens and are continuously doing so. Hence, the impact on healthcare workers in primary healthcare is substantial.<sup>14 15</sup> Many changes have been instigated in primary healthcare in many countries worldwide, including Sweden, to maintain the safety of both the patients and the healthcare workers.<sup>2 4 16</sup> Instead of meeting patients face to face, telephone or video consultations are taking place and sometimes contact by email.<sup>4 8 15 17 18</sup>

Changes in response to the COVID-19 pandemic can cause stress and may add to



existing problems with working conditions in primary healthcare. Previous primary healthcare research has documented problems with heavy workload, large administrative burden, poor job control, poor job satisfaction, understaffing and high staff turnover.<sup>19–22</sup> Studies have also found that problems with working conditions can lead to reduced quality of patient care and patient safety.<sup>23</sup>

Against the backdrop of changes in primary healthcare incurred by the COVID-19 pandemic, the aim of this study was to explore primary healthcare physicians' experiences of the changes in working conditions in response to the pandemic. This knowledge is important because previous research has documented many work-related problems in primary healthcare even before the pandemic.<sup>19–22</sup>

## METHODS

### Study design and setting

We used a qualitative approach based on 11 semistructured interviews with physicians from different primary healthcare units in four regions in Sweden. Individual interviews were considered the most relevant method to obtain information on how the pandemic has affected the daily work and the consequences for the work environment in primary healthcare. Our approach was explorative as we wanted to gain insights into physicians' own experiences and what they considered most important.

The Swedish healthcare system is divided into 21 regions. Primary healthcare centres are either publicly or privately managed and mainly funded by taxes. In 2019, 44% of 1140 primary healthcare settings in Sweden were privately managed.<sup>24</sup> Primary healthcare in Sweden is responsible for first-line healthcare, treatments and diagnosis, as well as prevention of diseases for the whole population.

### Recruitment of participants

We used a purposeful sampling strategy to achieve a diverse sample with regard to size (number of listed patients) and location (in terms of rural/urban location and different regions of Sweden) of primary healthcare centres. The purpose was to capture a broad range of experiences concerning working conditions to improve the trustworthiness of the study.

We approached six regions in Sweden by email to recruit participants for the interviews. In three of the regions, the person responsible for research in the primary healthcare organisation was contacted with brief information about the study aim and method as well as an enquiry about participation. For the three other regions, we asked key persons to either forward our request for interviews to other persons within their organisation or if they could assist us in the recruitment of participants. Six regions were approached, of which four agreed to participate. Two regions did not respond. The four regions are located in the middle and southern parts of Sweden.

**Table 1** Participant characteristics

Characteristics	n (%)
<b>Sex</b>	
Male	7 (64)
Female	4 (36)
<b>Level of medical training</b>	
Specialist in general medicine	10 (91)
Resident in general medicine	1 (9)
<b>Employment position</b>	
Medically responsible physician*	7 (64)
<b>Age (years)</b>	
35–42	6 (55)
43–66	5 (45)

\*Responsibility for patient safety and the healthcare provided at their unit.

Physicians in the four regions were approached to take part in the study in slightly different ways, depending on the local management and who were the contact persons for the primary healthcare organisation. Still, the recruitment adhered to our purposeful sampling strategy of involving physicians from different locations, working in different-sized primary healthcare units.

We approached 15 physicians and 11 agreed to participate in the study (table 1).

The participants gave written informed consent and were assured of confidentiality and that their full identity would not be known to anyone but the researchers. By signing the informed consent, the participants also approved storage of their email address to enable the research team to contact them again for follow-up interviews.

Economic compensation of 1000 Swedish kronor, approximately US\$116 per participant, was paid to the unit to which the participants belonged to cover some of the cost of working time. No individual received payment. Transcripts are stored on the authors' password-protected computers and no unauthorised persons have access to the data.

### Data collection

A semistructured interview guide was developed by the authors with questions regarding various changes caused, directly or indirectly, by the pandemic. Examples of questions are: what changes have been made in the primary healthcare unit with regard to the coronavirus pandemic; what experiences have affected participants the most; how their working conditions have been affected; how psychosocial relations have been affected; and how cooperation with other units worked.

The interview guide was tested in one pilot interview (not included in the study). The pilot interview yielded relevant information and did not lead to any revisions of the interview guide. However, after conducting two

interviews, we recognised the need to add a question that specifically addressed participants' perception of the workload due to the pandemic in their primary health-care unit.

The interviews were conducted by two female researchers (HF and KS) between September and December 2020. Each interview lasted between 23 and 54 min. Ten interviews were conducted via videoconferencing software and recorded both by audio and video. One interview was conducted via telephone. All interviews were transcribed verbatim and labelled with a code. No field notes were taken. The transcripts were then examined by HF and KS to ensure their accuracy. None of the participants was known previously to either of the researchers performing the interviews.

### Analysis

The interviews were analysed with conventional content analysis according to Hsieh and Shannon.<sup>25</sup> This method is considered appropriate when there is limited research or knowledge of a phenomenon. In conventional content analysis, the categories are grounded in the experiences of the participants and knowledge is derived from the data. The research group is experienced in qualitative research and has published many studies using this analysis method. Initially, all authors read all interviews to achieve an understanding of the whole. Following this step, HF read the interviews with physicians to identify keywords and concepts. After coding by HF, subcategories emerged and were sorted into main categories. After the initial coding and categorisation, HF and JS met virtually to review the findings. The other researchers were then invited to discuss the interpretation, and after several meetings and email correspondence consensus was reached. The participants did not give feedback during the analysis but were informed about the availability of the final results.

### Patient and public involvement

No patient was involved since the study exclusively concerns physicians.

## RESULTS

Eleven physicians in primary healthcare participated in this study (table 1). All participants were either specialists or residents in primary care medicine. They worked in primary healthcare units located in both rural and urban areas of the middle and southern parts of Sweden.<sup>26</sup> Seven of the participants had leading positions in their unit, including overall medical responsibility. The median age was 42 years (range, 35–66 years) and 36% were female.

Analysis of the data yielded two categories and eight subcategories (table 2). The results of the analysis for each category and subcategory are presented in the following sections.

### Work organisation and routines

The pandemic influenced physicians' daily work in terms of coordination, planning and execution of work

**Table 2** Categories and subcategories

	Increased	Increased and decreased
Work organisation and routines	Flexibility in delivery of care	Patient interactions Interorganisational and intraorganisational interactions
Psychosocial work environment	Workload Information load Uncertainty and ethical concerns	Decisional latitude Social support

tasks, changes in routines, and collaboration between and within units. The participants also had to adjust to new physical structures of the workplace, the ambition being to limit the spread of the virus in the unit. This sectioning of workplaces made collaboration between colleagues and tutorials of resident physicians more difficult to manage. This category consists of three subcategories.

### Increased flexibility in delivery of care

The participants described increased flexibility and possibilities for more individual solutions for patients because of the pandemic. Some of the patients received a home visit by their physician, and other medical issues were taken care of over a phone call or a video contact. The participants experienced these solutions to be feasible and acceptable as an effect of the pandemic. Both patients and colleagues in primary healthcare were positive towards the individualised delivery of care. According to participants, many patients expressed gratitude when meeting their physician at home, engendering a sense of job satisfaction among the physicians.

When we started with home visits, the patients appreciated that a lot. They got overwhelmed when we came to their home, 'oh, can you come home to me, that is amazing'. So, it feels very nice to be able to offer it and to get this appreciation. (Participant 2)

The participants also described more flexible solutions regarding medical rounds with municipality nurses. Instead of regular visits to nursing homes, the medical rounds could now be handled digitally or by telephone to minimise visitors in the nursing homes. Participants also described increased flexibility in terms of being able to work from home with mild symptoms.

Yes, we have worked considerably more by telephone but also by digital consultations with video with patients. We have also used digital media through video for medical rounds with nurses in retirement homes; normally we visit them so that is a big change. (Participant 6)

### Increased and decreased patient interactions

Early in the pandemic, in March 2020, the influx of patients to the primary healthcare units reduced temporarily. The participants were told to cancel all appointments with patients older than 70 years old to protect these most vulnerable patients. Consultations changed from face-to-face interaction to telephone and digital meetings. Annual appointments with patients were cancelled because many of the patients belonged to risk groups.

In early spring, there were a lot of patients who were worried; they cancelled their appointments because they were afraid of getting infected. Our waiting room was completely empty, so this was probably the safest place in town when it came to not getting infected. (Participant 2)

The participants described how, in trying to minimise the spread of the virus, the patients' 'physical' path through the primary healthcare units had to be changed rapidly, often from one day to the next. The primary healthcare units had to establish separate entrances or external facilities such as tents or outdoor sheds to be able to admit patients with infectious symptoms. Furthermore, employees were distinguished as 'dirty' or 'clean'; the 'dirty' clinicians handled suspected infectious cases. However, this way of organising the work led to difficulties. For example, it was more difficult for resident physicians working with infectious patients to ask for help when encountering medical problems. It was also sometimes difficult to spare healthcare workers to observe patients with a medical emergency, for instance, while waiting for an ambulance.

The most evident change is that we have a special entrance for patients with infectious symptoms; we also have two specific rooms for these particular patients. (Participant 7)

### Increased and decreased interorganisational and intraorganisational interactions

The participants experienced increased cooperation with external units as a result of the pandemic; for example, cooperation with municipality-based care of the elderly increased in both nursing homes and home-based care. The increase in cooperation was considered a positive result of the pandemic and something the participants would like to see continue. Several participants initiated training together with municipal healthcare, which involved training the employees in home-based care and retirement homes, teaching them about, for example, hygiene routines and how to reduce spread of the virus. The participants believed this interaction would not have taken place without the pandemic. There were also new contacts and interactions established with other community actors to prepare for adverse consequences of the pandemic, for example, with churches, funeral homes and fire brigades. These interactions involved

preparation for mass testing as well as planning on how to handle deceased patients. The participants believed the new interactions were positive, strengthening the role of primary healthcare in the community and contributing to a feeling of not being alone in the difficult situation caused by the pandemic.

In my opinion, cooperation with the municipal healthcare has improved. Earlier, I did not even know the name of their supervisor. Now I have spoken on the phone directly with the person in charge several times. Through our initiative, we went out to the municipal units to establish contact to build on for the future. (Participant 5)

The pandemic also caused cooperation with hospitals and specialised care to deteriorate because some units returned patient referrals (from primary healthcare) with the explanation that they were unable to treat the patients 'due to the pandemic'. Primary healthcare thus had to be responsible for some patients with few or no instructions on how to handle their conditions. This increased the job demands for the participants and caused concern as to whether patient safety was in jeopardy due to insufficient medical treatment and the risk of missing progressive cancer diseases. Even units of specialised care that, in the participants' opinion, were suitable for digital consultations with patients, such as psychiatric divisions, cancelled their appointments with patients and ceased accepting referrals.

This certain unit at the hospital admitted patients to our primary care unit and justified this with answers saying that the patients should be handled in primary care due to the corona pandemic. This was a systematic referral of patients from specialized units in hospitals to primary care units. I've never seen such number of referrals from the hospital to our unit. (Participant 9)

It was not only cooperation between units that changed due to the pandemic. The participants' own primary healthcare units also had to make several changes with regard to internal meetings and education to ensure the work environment was safe from spreading the virus. Physical workplace meetings and training were replaced by digital meetings, which opened up the possibility of participating from home. The opportunity to participate in meetings and educational events digitally was considered positive by some participants because they saved time; they did not have to travel to and from meetings.

But I'm glad to attend meetings digitally, not least to avoid travelling time. (Participant 11)

Shortage of technical equipment such as computers to enable participants to work from home was a problem identified by participants.

And then we had another technical problem. We had managed with two webcams and two headsets,

but now everyone wanted to have these and then they were not available in all of Sweden, apparently. (Participant 2)

### Psychosocial work environment

The psychosocial work environment category encompasses five subcategories. Increased workload concerns how the pandemic influenced participants' workload. Increased information load deals with how the participants perceived and were affected by the information that emerged in response to the pandemic. The participants experienced the information load overwhelming, with information emerging from a multitude of sources and too frequently. Increased uncertainty and ethical concerns include various forms of concerns that the participants experienced in relation to the pandemic. One such concern was related to decisions regarding which patients to prioritise for physical consultation. Increased and decreased decisional latitude refers to participants' opportunities to influence their work situation during the pandemic. Increased and decreased perceived social support concerns the influence of the pandemic on social relationships at work and in general. Participants experienced an increased closeness with colleagues, with earlier conflicts being possible to put aside when jointly trying to cope with the 'mutual enemy' in the form of COVID-19.

### Increased workload

The workload in primary healthcare increased due to the pandemic, for example, time required to answer questions from both colleagues and patients. Because COVID-19 was new to the participants as well, it forced them to read and study the subject after regular working hours to be able to handle all the questions. The participants described their working situation as untenable and they expressed great concern regarding colleagues' ability to endure in the long run.

In my opinion, on the whole, it [the pandemic] is an extra layer of something you always have to consider in your daily work. And that's a burden in itself. It's quite a heavy burden sometimes, and it takes a lot of energy from you. (Participant 10)

Some participants saw colleagues getting exhausted and forced to take sick leave as a result of the job strain caused by the pandemic. The participants lamented the difficulties of combining their regular primary healthcare work tasks with taking on and handling all the COVID-19-related work tasks, including testing, infection tracing, handling an overwhelming number of questions from colleagues and patients, as well as making assessments of patients with potentially critical illnesses. Although the participants had seen cancellation of most regular care during spring, the work situation worsened considerably in the autumn of 2020, when patients began returning in normal or even larger numbers to primary healthcare. Some of the participants expressed that care postponed

from the spring could not wait any longer when autumn came.

Both physicians and nurses are tired now, and now that we're reopening, the pressure from patients increases – what could wait 6 months ago, no longer can wait. (Participant 1)

### Increased information load

Participants described an overall overload of information related to COVID-19. This information could be continuous updates from day to day of when and who to test for SARS-CoV-2. All this information generated stress and caused participants to devote considerable time to read and digest new directives. According to the participants, the information came from several different sources, such as different management levels in the healthcare organisation and public authorities. The directives were not always consistent, causing confusion and discussion among the healthcare workers. Many participants were uncertain regarding which information was most relevant or recent and what guidelines were most up to date and which were outdated. The participants were also affected by their patients seeking information and directives from authorities to the population. The participants described how patients heard one thing from the press conferences held by the Public Health Agency of Sweden one day and then the next day the primary healthcare unit was overwhelmed with phone calls and questions about new guidelines concerning testing, quarantine and immunisation.

It's the same thing with all these changes as well. One day it's supposed to be in this way but the next day it's supposed to that way...And the fact is that the guidelines can be different nationally, regionally and even here within our own unit. (Participant 10)

According to the participants, the information received was too much, too often and from too many sources and much of it was unnecessary, for example, daily reports on the number of hospitalised patients and patients in the intensive care unit.

### Increased uncertainty and ethical concerns

The participants described various forms of uncertainty and challenging considerations caused by the pandemic. Deciding which patients to prioritise for a physical appointment at the healthcare unit created ethical concerns for the participants. Due to the risk of viral transmission, inperson contact was reduced during the first wave of the pandemic in the spring of 2020. However, some patients had to physically meet their physician and it could be difficult for the physician to decide which patients had the most important medical needs.

The ethical issues, 'which patient am I supposed to prioritize for a visit here'? (Participant 2)

At the beginning of the pandemic, the participants experienced a great deal of uncertainty about the hygiene

routines and the personal protective equipment. There were also concerns and stress due to an obvious lack of equipment. Some participants underscored the responsibility the regions have when it comes to providing personal protective wear such as gloves, aprons and face shields because they had previous experiences of equipment running out of stock with negative consequences for the work environment. The participants described how the primary healthcare organisation was unprepared for the scenario of a pandemic and how that unpreparedness violated their working conditions in a negative way.

We need to organize preparedness for upcoming pandemics so there are enough supplies in stock. As it was in the beginning...it was a catastrophe/disaster. (Participant 7)

No one knew how or what. Are we supposed to wear facial masks? Are we supposed to wear a mouth guard? Are we not supposed to wear a mouth guard? We know that we should wash and disinfect our hands, but were we supposed to wear an apron? And the fact that there was a big lack of personal protective equipment was a stressor. (Participant 6)

Participants also expressed that they felt uncertainty regarding the risk of being infected by SARS-CoV-2. These worries diminished over time and few of the participants expressed that they felt stressed or anxious about contracting the virus after a few weeks.

In the beginning, everything was very uncertain, how does it [the virus] transmit, what hygiene routines are we supposed to have, which materials should we use, are there sufficient materials? There was a lot of fear and worries about that before the routines were established. And then there was extensive fear among us; some elderly colleagues who did not want to work with contagious patients. But this has all calmed down now, but in the beginning, there was, of course with all due respect, a lot of worry and fear regarding the disease. (Participant 7)

#### Increased and decreased decisional latitude

Some participants felt that the pandemic increased their opportunity to influence decisions regarding working conditions in their own primary healthcare unit. However, they did have to adhere to many top-down instructions, such as testing a certain number of patients or separating infectious from non-infectious patients. In some cases, participants questioned decisions coming from higher levels because they did not agree that the primary healthcare unit should be responsible for, for example, infection tracing in the community. When they expressed these opinions, they usually felt listened to and the additional work tasks were withdrawn. On the other hand, some participants mentioned limited ability to influence other tasks, such as a central decision to test for SARS-CoV-2 antibodies. Participants considered this antibody testing as unnecessary but still had to prepare for the work. Then

the decision on antibody testing was withdrawn, leaving participants frustrated because the units had planned and put a lot of energy into making it work.

We have managed. We had multidisciplinary meetings every week - talking through what had worked and not... what needed to be changed and so on. It worked perfectly fine. (Participant 3)

#### Increased and decreased perceived social support

The participants experienced an overall increase in social support between colleagues in their primary healthcare unit. They perceived colleagues to be more helpful, caring and understanding than before the onset of the COVID-19 pandemic. Several of the participants expressed a sense of loss in not being able to see colleagues as before due to social distancing restrictions, both in the workplace setting and outside of work. Social distancing entailed less physical contact between colleagues because spontaneous hugs and other forms of physical closeness ceased almost completely, which was a significant loss for some participants.

I think the 'team spirit' in our group has strengthened; a bit of 'us-and-them' feeling has been solved. The group has been more cohesive. (Participant 1)

Some participants raised concerns about lack of support for their hard work from the population in general and from the media, which focused almost exclusively on specialised care. This lack of recognition created a sense of frustration among healthcare workers in primary healthcare.

I don't begrudge all the heroes in hospitals their appreciation, but there are a lot of heroes outside the hospitals as well. They never get the attention they deserve. (Participant 9)

## DISCUSSION

The aim of this study was to explore primary healthcare physicians' experiences of the changes in working conditions in response to the pandemic. To the best of our knowledge, no study with the same intention has previously been published. This underscores the relevance of our study in highlighting the experiences of primary care physicians. We found that the pandemic has affected the working conditions in numerous ways, causing several changes in physicians' work organisation and routines, as well as in their psychosocial work environment.

Regarding the psychosocial work environment, our findings show that physicians' workload increased due to the pandemic. This is consistent with earlier pandemic-related findings which have shown that increased workload, risk of getting infected and lack of personal protective equipment make physicians concerned about their own health.<sup>27</sup> These findings raise concern because problems with working conditions in primary healthcare

were already known and documented by research before the onset of the COVID-19 pandemic.<sup>20 28 29</sup> Our findings suggest the importance of investigating the long-term effects of the pandemic on the working conditions of physicians in primary healthcare.

The participants described the COVID-19-related work with testing, routines and infection tracing as difficult to administer. Some of the physicians interviewed for our study reported seeing colleagues getting ill due to the increased workload caused by the pandemic. These findings are in line with prepandemic research showing negative effects of high levels of administrative tasks in the psychosocial work environment of physicians.<sup>21 30</sup> The changes in working condition caused by the pandemic generated feelings of uncertainty and ethical concerns among the physicians. Research has shown that the presence of ethical distress can negatively affect professional quality of life and increase employee turnover intentions.<sup>31</sup> It is also well known that change, in general, can be challenging because it contradicts our basic need for a stable environment and can create anxiety about how we will be affected.<sup>32</sup>

Another finding of our study was the high information load due to the pandemic, adding to the already heavy workload in primary healthcare. Despite the amount and availability of information, the participants were uncertain about what guidelines or instructions they should adhere to. These findings are in line with earlier research that has documented that receiving too much information can lead to fatigue, stress and impaired decision quality, as well as ignorance of the information.<sup>33–35</sup> The participants in our study wished for less frequent and more succinct information. Kain and Jardine<sup>36</sup> showed that family physicians in Canada had similar expectations when it came to communication and information retrieval in public health crises, for example, the outbreak of severe acute respiratory syndrome. Setting up units that healthcare professionals can consult with questions regarding testing, quarantine, personal protective equipment and more has previously been shown to be helpful for primary care physicians.<sup>37</sup>

Despite the many reported drawbacks with the working conditions, we also found that the pandemic led to positive changes, according to the physicians. More flexible care delivery with opportunities to work from home or meeting patients in their homes or via digital solutions was mentioned. Some of these changes facilitated a more individualised care provision adapted to what suited the patients best. This development is in line with the policies of the Swedish government and public authorities to achieve a more patient-centred healthcare that uses digital solutions for seeing patients.<sup>38</sup> According to the study participants, the COVID-19 pandemic appears to have improved this type of individualised care and digital ways of working. Another advantage attributable to the COVID-19 pandemic was the improved collaboration with municipal healthcare, which the participants hoped would continue after the pandemic.

Our study has a few limitations that should be considered when interpreting the findings. The participants themselves showed interest in participating in the study, which could have affected the outcome. For example, participants might have had negative experiences during the pandemic and wished to enlighten others about the problems. It is also possible that they had experienced successful changes that they wanted to share. The workload on Swedish primary healthcare was, and still is, heavy, which made the recruitment of participants difficult. The number of interviewees (N=11) might be considered low, although Malterud *et al*<sup>39</sup> emphasise that the strength of the information received is more important than the specific size of a study sample. Conducting too many interviews might result in excessive data, which increases the risk of misinterpretations or superficial analysis. The purposive sampling method used in our study enabled us to include participants with experiences from both large and small units, rural and urban, and men and women, thus strengthening information power.<sup>39</sup> Research has shown that most of the codes (92%) tend to emerge in the first 12 interviews, indicating that our results would not be very different with more interviews.<sup>40</sup> The results are limited to primary healthcare in Sweden and are not directly applicable in an international setting.

These limitations notwithstanding, our study also has considerable strengths. The participants were recruited from different regions, from primary healthcare units in both rural and urban locations. Both men and women of different ages and experiences were interviewed, thus increasing the credibility of our study. Furthermore, the research team is multidisciplinary (HF and MH are resident physicians in primary healthcare, doctoral student and post-doctoral, respectively; IS is a political scientist/sociologist; JS is a public health scientist; KS is a registered nurse; and PN is a behavioural economist) and experienced in various qualitative methods. The members of the team are employed at different universities and institutions, which contributed broad perspectives and experiences when interpreting the data and reporting the findings.

In terms of implications of the study, further research in this area is relevant because the COVID-19 pandemic has had a considerable impact on primary healthcare in Sweden and worldwide. Many problems with the working conditions in primary healthcare existed before the onset of the pandemic and therefore it is important to continue monitoring and examining this work environment and also learn from positive examples and experiences. Further investigations are warranted into physicians' needs in terms of information gathering and various forms of support in major crises. Research is also needed to investigate how the pandemic will affect primary healthcare in the longer term. Learning from the pandemic is important because this will not be the last crisis faced by primary healthcare. According to the results of our study, one important lesson for the next crisis or pandemic is the importance of coherent, structured top-down information to avoid information overload.

## CONCLUSION

The COVID-19 pandemic affected the working conditions of physicians in Swedish primary healthcare in numerous ways. The pandemic enforced changes in work organisation and routines. Increased flexibility, including more patient-oriented delivery of care, and novel means of interorganisational and intraorganisational interactions were perceived as positive by physicians. The pandemic also caused several changes in physicians' psychosocial work environment. Increased workload, information overload, as well as ethical considerations and feelings of uncertainty made the work environment stressful for the physicians.

## Author affiliations

- <sup>1</sup>Health, Medicine and Caring Sciences, Linköping University, Linköping, Sweden  
<sup>2</sup>Primary Health Care Center, Lambohov, Region Östergötland, Linköping, Sweden  
<sup>3</sup>Unit for Research and Development, Region Östergötland, Linköping, Sweden  
<sup>4</sup>Department of Behavioural Sciences and Learning, Linköping University, Linköping, Sweden  
<sup>5</sup>Vansbro Primary Health Care Center, Region Dalarna, Falun, Sweden  
<sup>6</sup>Center for Clinical Research Dalarna, Uppsala University, Uppsala, Sweden  
<sup>7</sup>Department of Health and Caring Sciences, Linnaeus University, Kalmar, Sweden

**Acknowledgements** The authors wish to thank all participants for contributing their experiences despite the high workload. The authors are grateful for their insights and reflections on how the pandemic affected their work.

**Contributors** HF planned and designed the study together with PN, IS and JS. HF and KS performed all interviews. HF drafted the manuscript and all authors participated in revisions and discussions of the analyses and the manuscript. All authors reviewed and gave feedback on the text. HF, KS and MH recruited participants. All authors approved the final version for submission. The guarantor of this study is PN.

**Funding** The study is funded by AFA Försäkring (AFA Insurance) (application no: 200130).

**Competing interests** None declared.

**Patient and public involvement** Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

**Patient consent for publication** Not required.

**Ethics approval** This study involves human participants and was approved by the Swedish Ethical Review Authority (no 2020-03981). Participants gave informed consent to participate in the study before taking part.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data availability statement** Data are available upon reasonable request. All data are in Swedish language.

**Open access** This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

## ORCID iDs

Hanna Fernemark <http://orcid.org/0000-0002-9029-4406>  
 Kristina Schildmeijer <http://orcid.org/0000-0002-0895-674X>

## REFERENCES

- Rawaf S, Allen LN, Stigler FL, *et al.* Lessons on the COVID-19 pandemic, for and by primary care professionals worldwide. *Eur J Gen Pract* 2020;26:129–33.
- SKR. Pandemin och hälso- och sjukvården. (the pandemic and healthcare). Pandemin och hälso- och sjukvården (skr.se) 2020.
- World Health Organization. WHO coronavirus (COVID-19) dashboard. Available: <https://covid19.who.int/> [Accessed 11 Feb 2021].
- Huston P, Campbell J, Russell G, *et al.* COVID-19 and primary care in six countries. *BJGP Open* 2020;4:bjgpopen20X101128.
- Dobson H, Malpas CB, Burrell AJC, *et al.* Burnout and psychological distress amongst Australian healthcare workers during the COVID-19 pandemic. *Australas Psychiatry* 2021;29:26–30.
- Chew NWS, Lee GKH, Tan BYQ, *et al.* A multinational, multicentre study on the psychological outcomes and associated physical symptoms amongst healthcare workers during COVID-19 outbreak. *Brain Behav Immun* 2020;88:559–65.
- Young KP, Kolcz DL, O'Sullivan DM, *et al.* Health care workers' mental health and quality of life during COVID-19: results from a mid-pandemic, national survey. *Psychiatr Serv* 2021;72:122–8.
- Kamerow D. Covid-19: don't forget the impact on US family physicians. *BMJ* 2020;368:m1260.
- Godderis L, Boone A, Bakusic J. COVID-19: a new work-related disease threatening healthcare workers. *Occup Med* 2020;70:315–6.
- Ranney ML, Griffith V, Jha AK. Critical supply shortages - the need for ventilators and personal protective equipment during the Covid-19 pandemic. *N Engl J Med* 2020;382:e41.
- Sun N, Wei L, Shi S, *et al.* A qualitative study on the psychological experience of caregivers of COVID-19 patients. *Am J Infect Control* 2020;48:592–8.
- Shechter A, Diaz F, Moise N, *et al.* Psychological distress, coping behaviors, and preferences for support among New York healthcare workers during the COVID-19 pandemic. *Gen Hosp Psychiatry* 2020;66:1–8.
- Dahl A. Sjukvården förbereder sig på ett förvärrat läge [Healthcare is preparing for a worsening situation], 2021. Available: <https://www.dn.se/sverige/sjukvarden-forbereder-sig-pa-ett-forvarrat-lage/> [Accessed 3 Mar 2021].
- Verhoeven V, Tsakitzidis G, Philips H, *et al.* Impact of the COVID-19 pandemic on the core functions of primary care: will the cure be worse than the disease? A qualitative interview study in Flemish GPs. *BMJ Open* 2020;10:e039674.
- Cederberg J, Andersson J. Primärvården räknar med högt tryck när vårdskuld ska beta av [Primary care expects high pressure when care debt is to be paid off], 2020. Available: <https://lakartidningen.se/aktuellt/nyheter/2020/06/primarvarden-raknar-med-hogt-tryck-nar-vardskuld-ska-betas-av/> [Accessed 8 Mar 2021].
- Krist AH, DeVoe JE, Cheng A, *et al.* Redesigning primary care to address the COVID-19 pandemic in the midst of the pandemic. *Ann Fam Med* 2020;18:349–54.
- Greenhalgh T, Koh GCH, Car J. Covid-19: a remote assessment in primary care. *BMJ* 2020;368:m1182.
- Hasani SA, Ghafri TA, Al Lawati H, *et al.* The use of telephone consultation in primary health care during COVID-19 pandemic, Oman: perceptions from physicians. *J Prim Care Community Health* 2020;11:215013272097648.
- Wilczek A. Amerikanska läkares "burnout" och svenska läkares "utmattning" [American physicians "burnout" and Swedish physicians "exhaustion"]. Available: <https://lakartidningen.se/klinik-och-vetenskap-1/kommentar/2015/05/amerikanska-lakares-burnout-och-svenska-lakares-utmattning/> [Accessed 16 Apr 2021].
- Andersson J. Svenska allmänläkare mer stressade än kollegorna i andra länder [Swedish general practitioners are more stressed than their colleagues in other countries], 2019. Available: <https://lakartidningen.se/aktuellt/nyheter/2019/12/svenska-allmanlakare-mer-stressade-an-utlandska-kollegor/> [Accessed 8 Jun 2021].
- Anskär E, Lindberg M, Falk M, *et al.* Legitimacy of work tasks, psychosocial work environment, and time utilization among primary care staff in Sweden. *Scand J Prim Health Care* 2019;37:476–83.
- Ohlander J, Weigl M, Petru R, *et al.* Working conditions and effort-reward imbalance of German physicians in Sweden respective Germany: a comparative study. *Int Arch Occup Environ Health* 2015;88:511–9.
- Shanafelt TD, Balch CM, Bechamps G, *et al.* Burnout and medical errors among American surgeons. *Ann Surg* 2010;251:995–1000.
- SKR. Sammanställning hälso- och sjukvård samt regional utveckling [Compilation of healthcare and regional development]. Ekonomi- och verksamhetsstatistik 2019.
- Hsieh H-F, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res* 2005;15:1277–88.
- SKR. Kommungruppsindelning [Municipal group division], 2017. Available: <https://skr.se/tjanster/kommunerochregioner/faktakom-munerochregioner/kommungruppsindelning.2051.html> [Accessed 19 Mar 2021].
- Lemire F, Slade S. Reflections on family practice and the pandemic first wave. *Can Fam Physician* 2020;66:468.
- Ström M. Många allmänläkare i riskzonen för långvarig sjukskrivning [Many general practitioners are at risk for long-term sick leave], 2019. Available: <https://lakartidningen.se/aktuellt/nyheter/2019/08/manga->



- allmanlakare-i-riskzonen-for-langvarig-sjukskrivning/ [Accessed 16 Apr 2021].
- 29 Johansson G, Sanches Bengtsson S, Jacobaeus A. *Arbetsmiljön i primärvården – intervjuer med läkare och sjuksköterskor [Work Environment in Primary Care. Interviews with Doctors and Nurses]*. Stockholm: The Center for Occupational and Environmental Medicine, Region Stockholm, 2019.
  - 30 Aronsson G, Bejerot E, Härenstam A. Onödiga och oskäligen arbetsuppgifter bland läkare: Samband mellan illegitima arbetsuppgifter och stress kartlagt i enkätstudie [Unnecessary and unreasonable tasks among doctors: connection between illegitimate tasks and stress mapped in survey]. *Läkartidningen* 2012;109:2216–9.
  - 31 Austin CL, Saylor R, Finley PJ. Moral distress in physicians and nurses: impact on professional quality of life and turnover. *Psychol Trauma* 2017;9:399–406.
  - 32 Grama B, Todericiu R. Change, resistance to change and organizational cynicism. *Stud Business Econom* 2017:1147–54.
  - 33 Phillips-Wren G, Adya M. Decision making under stress: the role of information overload, time pressure, complexity, and uncertainty. *J Decis Syst* 2020.
  - 34 Valika TS, Maurrasse SE, Reichert L. A second pandemic? Perspective on information overload in the COVID-19 era. *Otolaryngol Head Neck Surg* 2020;163:931–3.
  - 35 Soroya SH, Farooq A, Mahmood K, *et al.* From information seeking to information avoidance: understanding the health information behavior during a global health crisis. *Inf Process Manag* 2021;58:102440.
  - 36 Kain NA, Jardine CG. "Keep it short and sweet": improving risk communication to family physicians during public health crises. *Can Fam Physician* 2020;66:e99–106.
  - 37 Glatman-Freedman A, Bromberg M, Ram A, *et al.* A COVID-19 call center for healthcare providers: dealing with rapidly evolving health policy guidelines. *Isr J Health Policy Res* 2020;9:73.
  - 38 SKR. God och nära vård 2021. En omställning av hälso- och sjukvården med primärvården som nav [Good and close care 2021. A reorganization of health care with primary care as the hub], 2021. Available: <https://www.regeringen.se/overenskommelser-och-avtal/2021/01/god-och-nara-var-d-2021-en-omstallning-av-halso-och-sjukvarden-med-primarvarden-som-nav/> [Accessed 30 Apr 2021].
  - 39 Malterud K, Siersma VD, Guassora AD. Sample size in qualitative interview studies: guided by information power. *Qual Health Res* 2016;26:1753–60.
  - 40 Guest G, Bunce A, Johnson L. How many interviews are enough? *Field Methods* 2006;18:59–82.