The impact of the COVID-19 epidemic on the district medical officer's role – a qualitative study

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Background
We wished to examine the role of the district medical officer in five Norwegian municipalities to provide new knowledge of how the experience from the pandemic might have led to changes to the district medical officer's role.

Material and method
Semi-structured interviews were conducted with 14 persons who had held key positions in local crisis management teams during and after the pandemic. The informants were recruited from five municipalities within the same county, and they all held leadership roles in health care (district medical officers), local politics or administration. The investigation followed up a study undertaken during the pandemic on an approximately identical study sample.

Results
After the pandemic, the function of the district medical officer had been expanded in terms of a greater full-time equivalent percentage, while their organisational placement had remained unchanged in the local administrations that were studied. Political and administrative leaders stated that as a result of their collaboration during the pandemic, they had become more familiar with the district medical officer as a professional and as a resource person in the organisation. The district medical officers reported a higher demand for their expertise in community health.

Interpretation
Close and frequent collaboration between the district medical officers and the local administration has helped enhance their mutual knowledge. The expertise of the district medical officers has become better recognised in the organisations, and the parties find it easier to contact each other to draw on each other's competence.

Main findings
The role of the district medical officers was reinforced in the form of higher full-time equivalent percentages after the pandemic, while their organisational placement remained unchanged in the municipalities that were studied.

Collaboration in the crisis management team meant that after the pandemic there was broader awareness and recognition of the district medical officers' expertise.

The newly acquired recognition of the district medical officer's role can be vulnerable to changes of personnel and the passing of time, since it does not appear to be organisationally entrenched.

The COVID-19 pandemic has brought the role, organisational placement and function of the district medical officers to the fore (1–4). Before the pandemic, the district medical officers described their role as invisible, vague and with limited access to key decision-making arenas (5). During the pandemic, the district medical officer was a key participant in local crisis management, a medical premise-setter for decisions related to infection prevention and control (1, 4, 6), and acted as coordinator between various agencies, organisations and administrative levels (1, 4, 7). A study of the district medical officers' perceptions of their own role after the pandemic concluded that 'the pandemic effect is over' and that the district medical officers again missed being involved in decision-making processes and having the local administration make use of their expertise (8).

During the pandemic, local crisis management was characterised by broad collaboration between a number of political, administrative and healthcare agencies, and this collaboration cut across different dividing lines from those that were in practice before the pandemic. The COVID-19 Commission (4) recommended that the local administrations learn from the pandemic and enact concrete measures to reinforce and stabilise the function of the district medical officer, as well as provide sufficient respite arrangements. The commission also highlighted the importance of utilising the expertise of the district medical officers also in non-crisis situations, and that provisions be made for appropriate information flows and joint arenas between the district medical officer and the decision-making bodies in the municipality. To achieve this, the Total Preparedness Commission (9) recommended that the district medical officers should be organisationally linked to the staff of the chief administrative officer. Organisational frameworks and leaders' expectations were highlighted as barriers to the district medical officers' remit in community medicine at the general level and in other sectors in the municipalities prior to the pandemic (5).

Cooperation with the local crisis management team during the pandemic is described as good, and the parties largely developed a consensus on the basic elements of crisis management (1, 10). This cooperation can be regarded as relational collaboration characterised by actors who are in direct contact with...
each other over time, and who develop *mutual knowledge* through dialogue and negotiation (11). Mutual knowledge implies insight into and recognition of how joint tasks can be solved (11). In light of this perspective, we wished to investigate how collaboration in local crisis management during the COVID-19 pandemic has impacted on the role and function of the district medical officers also in non-crisis periods. Our study examined whether and how experience from the pandemic has entailed any changes in the role of the district medical officers, seen from the standpoint of the local administrations and the district medical officers respectively.

### Material and method

To investigate the role of the district medical officer after the pandemic from a healthcare, political and administrative leadership perspective we chose a qualitative design with semi-structured interviews, which are well suited to investigate the perceptions and experiences of various actors with regard to particular topics (12). The design can be characterised as a small-N study, where the objective is to dig deep rather than drawing generalisable conclusions (13).

In qualitative studies it is essential to maintain a reflexive stance towards one's own preconceptions, since the interpretation of the data is affected by a number of factors (14). The authors of this study are social scientists who are concerned with organisation and management, and the study thus represents an external perspective on the understanding of the district medical officers' role. The approach and research question are influenced by previous research that the authors have conducted with regard to this role (1).

### Sample

The sample consisted of 14 informants who represented health care, politics and administration in the crisis management teams in five municipalities in a single county (Table 1). To gain an understanding of changes in the role of the district medical officers, we wished to use the same informants as in the study of the district medical officers' role during the pandemic (1). Ten of the informants participated in both studies, while four had resigned from their positions since the previous data collection and were replaced by persons in equivalent positions with insight into the previous and current role of the district medical officers. There was some variation in the positions that represented politics and administration, while district medical officers represented health care in all municipalities.

### Table 1

Sample, including informant number, community size, position and area of work

<table>
<thead>
<tr>
<th>Participant</th>
<th>Municipality</th>
<th>Community size</th>
<th>Position</th>
<th>Area</th>
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</thead>
</table>

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<table>
<thead>
<tr>
<th>Participant</th>
<th>Municipality</th>
<th>Community size</th>
<th>Position</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>&lt; 4999</td>
<td>Deputy chief administrative officer</td>
<td>Administration</td>
</tr>
<tr>
<td>2</td>
<td>A</td>
<td>&lt; 4999</td>
<td>District medical officer</td>
<td>Health care</td>
</tr>
<tr>
<td>3</td>
<td>A</td>
<td>&lt; 4999</td>
<td>Mayor</td>
<td>Politics</td>
</tr>
<tr>
<td>4</td>
<td>B</td>
<td>5000–9999</td>
<td>District medical officer</td>
<td>Health care</td>
</tr>
<tr>
<td>5</td>
<td>B</td>
<td>5000–9999</td>
<td>Chief administrative officer</td>
<td>Administration</td>
</tr>
<tr>
<td>6</td>
<td>C</td>
<td>10000–19999</td>
<td>Chief administrative officer</td>
<td>Administration</td>
</tr>
<tr>
<td>7</td>
<td>C</td>
<td>10000–19999</td>
<td>District medical officer</td>
<td>Health care</td>
</tr>
<tr>
<td>8</td>
<td>D</td>
<td>&gt; 20000</td>
<td>District medical officer</td>
<td>Health care</td>
</tr>
<tr>
<td>9</td>
<td>D</td>
<td>&gt; 20000</td>
<td>Deputy mayor</td>
<td>Politics</td>
</tr>
<tr>
<td>10</td>
<td>D</td>
<td>&gt; 20000</td>
<td>Chief administrative officer</td>
<td>Administration</td>
</tr>
<tr>
<td>11</td>
<td>E</td>
<td>&gt; 20000</td>
<td>Mayor</td>
<td>Politics</td>
</tr>
<tr>
<td>12</td>
<td>E</td>
<td>&gt; 20000</td>
<td>Head of local health and care services</td>
<td>Administration</td>
</tr>
<tr>
<td>13</td>
<td>E</td>
<td>&gt; 20000</td>
<td>District medical officer</td>
<td>Health care</td>
</tr>
<tr>
<td>14</td>
<td>E</td>
<td>&gt; 20000</td>
<td>District medical officer</td>
<td>Health care</td>
</tr>
</tbody>
</table>

**Implementation**

The project that includes this study has been assessed and approved by the Data Access Committee (DAC) of a local health trust. Before start-up, an information leaflet and a consent form were sent to all informants. The data collection was undertaken in February and March 2023. The interviews with the district medical officers lasted approximately 60 minutes, while those with politicians and administrative leaders lasted approximately 30 minutes. Since the study focused on the role of the district medical officers, it was natural that our interviews with these informants were more in-depth.

In May 2023, the World Health Organization declared the pandemic to be over at the global level (15). This notwithstanding, we defined the period for this study as 'post-pandemic', since infection control was no longer handled by the local crisis management teams and the informants reported that normal operations had been resumed.
The interviews included questions about changes in the district medical officer's role through topics such as organisational placement, duties, collaboration, the role of planning frameworks, experiences and relationships. The interviews were conducted as video meetings by Zoom with sound capture on an audio recording device. Three of the authors conducted interviews, most of which were conducted by two interviewers. Each interview was transcribed and depersonalised with an encryption key in accordance with applicable data protection regulations. The audio recordings were subsequently deleted.

Analysis
The analysis of the interviews was guided by research questions about the changes in the role of the district medical officer that the informants described. The analysis was based on reflexive thematic analysis (16). The authors started by reading all the interviews to look for topics and patterns (familiarisation). The interviews were subsequently coded by each author, resulting in a number of codes that were discussed and categorised by the authors jointly. The discussion produced four topics sorted under the headings 'organisation' and 'the importance of collaboration' (Table 2). The topic titles represent the core of each topic (16) and are presented with an illustrative quote.

Table 2

Overview of bottom-up codes, topics illustrated by a quote and main topic

<table>
<thead>
<tr>
<th>Topic (quote)</th>
<th>Main topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher FTE</td>
<td></td>
</tr>
<tr>
<td>The district medical officer and infection control position are given higher priority.</td>
<td>'The district medical officer's position is given higher priority than before.'</td>
</tr>
<tr>
<td>Avoid overburdening</td>
<td></td>
</tr>
<tr>
<td>Prepared to face further crises</td>
<td></td>
</tr>
<tr>
<td>Full-time equivalent percentage increased to promote recruitment</td>
<td></td>
</tr>
<tr>
<td>Organised as part of health care</td>
<td></td>
</tr>
<tr>
<td>No need for organisational change, since the organisation is flexible</td>
<td>'Organisational placement is not an obstacle to involvement.'</td>
</tr>
<tr>
<td>The district medical officer's expertise is crucial in more areas than health care</td>
<td></td>
</tr>
<tr>
<td>Expectation and desire for the district medical officer to take the initiative beyond healthcare issues</td>
<td></td>
</tr>
<tr>
<td>Expertise in community medicine is in higher demand and more valued</td>
<td></td>
</tr>
<tr>
<td>Experience from the pandemic has helped increase trust in the district medical officer</td>
<td>'Increased recognition of competence.'</td>
</tr>
<tr>
<td>The parties have got to know each other and what the district medical officer can contribute</td>
<td>'Experience from the pandemic has facilitated collaboration.'</td>
</tr>
</tbody>
</table>

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Results

Organisational change

The district medical officer's position is given higher priority than before

In all of the five municipalities, the district medical officer's full-time equivalent percentage has increased since the pandemic. Explanations included that the municipalities give higher priority to the district medical officer and infection control positions than before, and that full-time positions are important in order to recruit skilled doctors in a labour market where doctors are a scarce resource. A further reason for the increased full-time equivalent percentage was a desire to avoid overburdening the district medical officer, as seen during the pandemic, and to be prepared to face further crises.

The descriptions of the district medical officer's responsibilities and duties after the pandemic revealed a varied and complex working situation as a medical and community medicine advisor, which also included administrative tasks such as mentoring specialty registrars and heading a medical centre and a GP surgery. One district medical officer explained how providing community health advice often competed with other assignments:

'Too much time is wasted on being head of department and personnel and having budget responsibility (...) heading a service that is constantly short of staff (...) is arduous (...). Too little time for the larger strategic advisory input that we are supposed to provide (...).' (District medical officer, participant 7)

Organisational placement is not an obstacle to involvement

None of the district medical officers in the sample had changed their organisational placement as a result of experience from the pandemic. In four of the municipalities, the district medical officer was placed under the head of municipal health and care services, while one was in a staff function to 'serve the entire organisation' (chief administrative officer, participant 10). None of the administrative or political representatives expressed a need to change the position's placement, but it was also pointed out that the district medical officer's competence was important in areas other than health care, for example in preventive efforts.
'We probably haven't fully grasped the importance of prevention. This goes all the way down to day-care, primary school (...), the doctors' and district medical officers' expertise and the importance of planning for prevention, that's what I would consider to be the most important work in the long term.' (Deputy mayor, participant 9)

Several chief administrative officers and mayors claimed that compared to the pre-pandemic situation, the municipalities could now better see the need to include the district medical officer in strategic work. However, the chief administrative officers did not consider organisational placement to be an obstacle, stating organisational flexibility as a reason.

'Since we have a local authority organisation where the lines between the chief administrative officer and the heads of services are short, I feel that the district medical officer is placed very close to my role as well. The distance is short.' (Chief administrative officer, participant 5)

Many political and administrative leaders explained that the district medical officers could and should engage in matters that they deemed relevant, and that their organisational placement in the healthcare sector was not a hindrance to this. On the contrary, there was an expectation that district medical officers should involve themselves in matters beyond health care by taking their own initiatives:

'(...), really expect that in light of their expertise, the district medical officers should be more proactive, since there is a lot of knowledge that is not requested because we fail to see that it's important in the given context.' (Deputy mayor, participant 9)

The view that short distances and an informal local authority organisation made for opportunities to become involved was also supported by some district medical officers who described how they took the initiative to become involved in matters where they felt that expertise in community health was crucial:

'I have no problems in contacting the technical division and joining in, but I need to keep an eye out for this myself (...). This also applies to providing medical advice in most contexts. There are health services for children and adolescents, but I sign up, I only need to be a little proactive, then I'm allowed to be involved (...)' (District medical officer, participant 4)

The district medical officers felt that they had 'organisational freedom to work across sectors, like we are supposed to' (district medical officer, participant 8), but there were nevertheless a few who called for a more cross-sectoral organisational placement. This was grounded in a desire to become more involved in the municipality's strategic considerations and planning processes without having to take the initiative themselves:

'I would perhaps like to be invited into the chief administrative officer's management group more often, so that I could have a little more say in the wider strategic decisions for the entire municipality. However, I feel that it's
okay compared to what it was like traditionally. I'm no closet gnome, to put it that way.' (District medical officer, participant 7)

'The district medical officer has had a far more peripheral role since we were organised [under the head of health services]. Now it's all filtered through a person who has no particular competence in environmental health, infection control and medical services. I would say that it would be better to organise it directly below the chief administrative officer, for example. Now, there's an additional managerial layer in between.' (District medical officer, participant 2).

Towards the end of the pandemic, one district medical officer who was organised below the head of health services independently took the initiative to hold regular dialogue meetings between the district medical officer and the chief administrative officer:

'… established a routine dialogue with the chief administrative officer through separate dialogue meetings … I asked for it and got it … because I believe that the district medical officer is a key medical advisor to the municipality and should have the ear of the chief administrative officer.' (District medical officer, participant 7)

The importance of collaboration

**Increased recognition of competence**

The data material showed several examples of how the close collaboration throughout the pandemic has caused the district medical officers' expertise in community health to be more frequently sought after and more highly valued post-pandemic. One example comes from a mayor (participant 9), who 'more often calls for a statement from the district medical officer on a number of matters', and a chief administrative officer (participant 6) who 'makes more strategic use of the district medical officer than before (…) in organisational development work that the district medical officer previously did not engage in.' A further example is that the district medical officer was invited to regularly scheduled meetings with the health trust:

'(…) I draw this person into the meetings with the health trust and the interaction with them (…) meetings with a whole bunch of senior consultants (…) it's easy to be steamrollered (…) I make certain to have the district medical officer with me there. Positive effect, a very sensible guy who has shown excellent discernment. A good team player who is great to have on board (…) has earned more trust through the pandemic. This role and this person have become important to us.' (Chief administrative officer, participant 10)

The inclusion of the district medical officer in the meetings with the health trust was described as a consequence of the collaboration during the pandemic, which helped the management get to know the district medical officer both as a
person and as a highly skilled professional. Political and administrative leaders all highlighted the importance of the district medical officer's personal qualities, for example as expressed by one chief administrative officer:

'To have expertise that goes beyond purely medical matters. And interest and commitment, personal qualities.' (Chief administrative officer, participant 6)

**Experience from the pandemic has facilitated collaboration**

Many participants referred to how experience from the pandemic has made collaboration across sectors and levels easier. One reason is that many actors in the local administrations have been made aware of the relevance of the district medical officer's competence, also beyond purely health-related issues. The district medical officers themselves feel that the pandemic has helped increase the awareness of what they can contribute:

'The pandemic meant that the district medical officer went from being a kind of grey pen-pusher to appearing as a sort of everyday hero that everybody leant on and listened to, and I believe some of that has stuck, in a way. That if we don't know what to do, we can ask the district medical officer, and we will surely receive good advice.' (District medical officer, participant 7)

Some of the district medical officers in the sample reported to being contacted about more issues than before, because other local officials have been made aware of what a community health specialist can contribute:

'It's something about meeting someone face to face and getting to know each other and what this person in that position can do to help, then you get asked. So that we actually get to work on the things we know.' (District medical officer, participant 14)

'We have probably become better known to the municipal executive board and committees (…) The district medical officer's role has become better known in the organisation and is perhaps being used more for community health advice.' (District medical officer, participant 13)

It is suggested that the district medical officer's role has changed, but it is also pointed out that acquaintance is not necessarily a basis for being invited into various processes:

'We became better known in the organisation and made acquaintances, which has been a positive thing. But we see staff turnover and restructuring, new roles appear quickly (…) I haven't seen that the relationships we established have meant we're invited in more than before. However, it is perhaps easier for us to get in touch on matters that we want to take up.' (District medical officer, participant 8)

**Discussion**

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The main picture that emerges from the material is that there are a number of overlapping experiences in the municipalities studied and between the healthcare, political and administrative actors when it comes to the role of the district medical officer after the pandemic. Opinions differed, however, between political and administrative leaders on the one hand and the district medical officers on the other regarding where the function of the district medical officer should be placed in the municipal administration. Different opinions were also voiced regarding whether the district medical officer is sufficiently involved in strategic planning processes in the municipalities. For example, many district medical officers felt that they needed to actively link themselves to such processes, and claimed that being called in when needed was not always sufficient.

The full-time equivalent percentage for the district medical officer's function had increased in the municipalities that we studied. Reasons given by the participants in the sample were the higher priority given to community medicine and infection control, as well as a desire to avoid the work overload that was seen during the pandemic. This is in line with the efforts recommended by the COVID-19 Commission (4) with a view to strengthening the district medical officer's function.

None of the municipalities in the study had made any changes to the organisational placement of the district medical officer's function post-pandemic, and in four municipalities this function was placed under the municipal health service. Only in one municipality was the district medical officer placed on the staff of the chief administrative officer, as recommended by the Total Preparedness Commission (9). As also shown by Hagestuen and Feiring (8), our study shows that placing the district medical officer organisationally in the municipal health service may give rise to challenges. Organisational distance to the local leadership may mean that the district medical officer is involved too late and too little in major strategic decisions, and this organisation also challenges the cross-sectoral function that the district medical officer performs.

Political and administrative leaders in our study described how they recognised and requested the district medical officer's expertise in strategic matters to a greater degree than before the pandemic. They also highlighted the importance of involving the district medical officer in matters beyond health care. Nevertheless, they saw no need to undertake organisational changes to formalise this. Flexibility, short distances and an informal local organisation were argued as indicating that the present organisation functioned well. The district medical officers agreed that they were able to take the initiative to become involved, but nevertheless called for a more cross-sectoral placement in the organisation in order to better apply their expertise in community health.
Hagestuen and Feiring (8) suggest that the role of the district medical officer is gradually reverting to where it was before the pandemic, i.e. a role characterised by little visibility and with limited access to key decision-making arenas (5). Our findings are more nuanced. The district medical officers no longer participated regularly in key decision-making arenas with the municipal leadership, and they no longer set the premises as before (1). Our findings show, however, that the local leadership recognises and wants to make good use of the district medical officers' competence. The district medical officers also felt that they had greater freedom to involve themselves in such processes. The political and administrative participants, as well as the district medical officers themselves, highlighted personal initiative as a crucial factor for such involvement.

Looking at the findings in light of Vik's (11) interaction theory, this suggests that the collaboration between politicians, administrators and healthcare professionals in the municipal crisis management team has had an impact on the role of the district medical officer after the pandemic. This relational collaboration has made leaders in the municipalities studied more aware of the district medical officers' expertise and personal qualities, and the district medical officers are receiving more recognition of their own role. This mutual system knowledge may help explain why it has become easier for the actors to get in touch and make use of each other's expertise when they can see a need for it.

The challenge that arises when involvement and collaboration are largely based on mutual systems knowledge is that this knowledge is primarily associated with the person, not with an organisational role or function. A change of personnel entails a risk that the gains achieved through the interaction during the COVID-19 pandemic can erode when the personnel that staffed the crisis management team during the pandemic are replaced.

In light of the advice from the COVID-19 Commission (4) concerning the role of the district medical officer in non-crisis periods, we can ascertain that the mutual knowledge that the actors have accumulated through relational collaboration has created a solid basis for exchange of opinion and discussion of shared problems. However, this is not necessarily enough to ensure good information flows and suitable arenas for discussion over time. To achieve this, we argue that the municipalities also need to make organisational changes. Arguments about flexibility, short reporting distances and an informal municipal organisation are tenable when there is a strong relationship between the actors, but this situation is vulnerable to staff turnover and the test of time. Placing the district medical officer organisationally in or closer to the chief administrative officer's staff, or establishing fixed meeting points with the municipal leadership, can be measures to ensure greater involvement and utilisation of the district medical officer's expertise, also in non-crisis periods.

Strengths and weaknesses of the study
The study sample is drawn from five small and medium-sized municipalities in a Norwegian county, and has no informants from large cities. The importance of collaboration during the pandemic is not transferrable to other municipalities where the district medical officer did not play a key role in the crisis management team during the pandemic. The fact that the municipalities all belong to the same county may also have resulted in a ‘contagion effect’ when it comes to attitudes to the organisation of, and ideas about, the role of the district medical officer. This could be one reason why the differences between the municipalities in the study are relatively minor.

The study has the same design and almost the same sample as the one by Hungnes, Vik and Veddeng (1), and this is a strength when it comes to studying changes over time. The study also responds to the call from Hagestuen and Feiring (8) to investigate the way in which the district medical officer's role is perceived by municipal leaderships. In this way, the study helps add nuance to the description given by Hagestuen and Feiring (8) of the district medical officer's role after the pandemic. There are nevertheless clear empirical similarities between our study and that of Hagestuen and Feiring (8), and this strengthens the validity of both studies.

Although the municipal leadership describes how their familiarity with and recognition of the district medical officer has increased, this is not necessarily reflected in practice. A study that maps out the scope and type of involvement of the district medical officer could provide a more detailed image of how various municipalities make use of this role after the pandemic.

Although the crisis management teams no longer were active and we define the time of the study as post-pandemic, this study has been undertaken close to the time of the COVID-19 pandemic. A follow-up study at a later point would be useful to investigate whether the gains from collaboration during the pandemic have withstood the test of time.

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The article has been peer reviewed.

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