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The district medical officer's role during the pandemic – a qualitative study

ORIGINAL ARTICLE

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BACKGROUND
We studied the district medical officers' role during the pandemic with a view to enhancing our knowledge of their role in municipal crisis management.

MATERIAL AND METHOD
Fourteen semi-structured interviews were conducted with key participants in crisis management in five local authorities, in the fields of medicine, policy and administration. The data were subjected to empirical qualitative analysis inspired by stepwise deductive-bottom-up methodology.

RESULTS
The study showed that as premise-setters and coordinators, the district medical officers were key actors in crisis management: The district medical officers' medical knowledge was sought and valued by the local authority management in a pandemic situation fraught with uncertainty. The district medical officers actively used different networks to coordinate the work, and interacted with various actors in the municipality, in industry and nationally, with regard to both infection control and infection management efforts.

INTERPRETATION
District medical officers' expertise in community medicine assumed greater significance during the pandemic and gave them access to central decision-making arenas and networks.

Main findings

The district medical officers in the five municipalities were key actors in the municipal crisis management teams.

The district medical officers were premise-setters for decisions.

Infection prevention and infection management work was coordinated by the district medical officers.

The COVID-19 pandemic is an example of what Ritter and Webber refer to as *wicked problems* (1, 2) (in Norwegian called '*gjenstridige problemer* (3)). Wicked problems are by their nature unique, unpredictable and complex, with no simple solution and spanning organisational boundaries, administrative levels and sectors (1, 4). To address such problems, cooperation and coordination between different actors, organisations and administrative levels are deemed necessary (5).

In Norway, municipalities have played a key role in the crisis management of the pandemic (6, 7), with responsibility for preventing and curbing infection, organising tests and vaccinations, and providing advice and guidance to the public (8). Most municipalities have organised their crisis response through a crisis management team consisting of various actors who coordinate preventive efforts and response activities (8), and who need to act quickly and appropriately in an unpredictable environment (9). The crisis management teams faced complex challenges in making decisions, introducing safety measures and responding to different interests and expectations among the population (10). Despite the wicked problem that the pandemic represented, Norway's response has been positively assessed (7). Explanations include widespread endorsement by the population, a good economic situation, close cooperation between politicians, public administration and medical experts (10, 11), and the fact that Norway is a society characterised by a high degree of trust (7).

District medical officers were included in the crisis management teams and were a key resource in the municipal infection prevention and preparedness work (12). Prior to the pandemic, Fossberg and Frich showed that district medical officers had perceived their own role as detached and with little influence, due to their limited access to decision-making arenas (13). In that study, the district medical officers described a difficult balancing act between providing clinical advice in individual cases and giving public health advice to the local administration, whereby the latter was often given lower priority due to the preponderance of requests from the health services.

The purpose of our study was to investigate the role of the district medical officers during the COVID-19 pandemic in light of the municipal crisis management efforts. We discuss how this differs from the district medical officers' perception of their own role prior to the pandemic (13). We did not link the term 'role' to a specific theoretical position or to provisions in labour law (14), but used it to illustrate the practices, function and importance of the district medical officers during the pandemic.

Material and method

The article is based on a data material that was part of a larger research project. 'Before, during and after the pandemic: What lessons can the specialist and primary health services draw from their coordination on COVID-19?'is a

collaborative project between Møre og Romsdal Hospital Trust, Molde University College, Volda University College and the Norwegian University of Science and Technology (NTNU).

The objective of the study was to elucidate the district medical officer's role during the pandemic from a medical, political and administrative perspective. In this article, the term *district medical officer* refers to senior district medical officers who had the authority of infection control officers in the municipality. We chose a qualitative design with in-depth interviews, which is well suited to investigate human perceptions and experiences (15).

Sample

We sent requests for participation to six municipalities within a county that included different sizes, different hospital areas and different local industries. The municipalities were selected strategically to capture a variety of challenges and patterns of interaction (16). The informants should be key actors in the crisis management team, and we wanted to include medical expertise, politics and administration in each municipality. Information about the study and a consent form were sent by email. Five municipalities accepted the invitation. There was some variation in terms of the positions that represented politics and administration, while the district medical officer represented medical expertise (Table 1). The sample consisted of 14 persons, four women and ten men.

Table 1

The sample in our study, including informant number, size of the municipality, position and area

Municipality (number of inhabitants)	Informant	Position	Area
A (< 4 999)	1	District medical officer	Medicine
	2	Mayor	Politics
	3	Deputy chief municipal executive	Administration
B (5 000 - 9 999)	4	District medical officer	Medicine
	5	Mayor	Politics
	6	Chief municipal executive	Administration
C (10 000 - 19 999)	7	Mayor	Politics
	8	Chief municipal executive	Administration
D (> 20 000)	9	District medical officer	Medicine
	10	Deputy mayor	Politics
	11	Director of emergency preparedness	Administration

Municipality (number of inhabitants)	Informant	Position	Area
E (> 20 000)	12	District medical officer	Medicine
	13	Mayor	Politics
	14	Head of municipal health affairs	Administration

Data collection

We conducted the interviews in the period from November 2021 to January 2022. This period is referred to as the fourth wave of infection (17). On this basis we considered that the informants were still facing a pandemic situation and had experience from approximately 18 months of the pandemic.

The interviews covered the following topics: the impact of the pandemic on the daily work, distribution of responsibility and decision-making processes in the crisis response team, internal and external collaboration and the role of the planning framework. The district medical officer's role was not a main topic, but the descriptions that the informants provided of the crisis management contain a rich data material on the role played by the district medical officer. The interviews lasted for approximately 60 minutes and were recorded. All the authors participated in at least two interviews, and two of the authors transcribed all the interviews to ensure that both had a good insight into the data material. Each interview was transcribed and anonymised with an encryption key in accordance with data protection rules. The audio recordings were subsequently deleted.

Analysis

As a first step in the analysis, two of the authors undertook a bottom-up coding inspired by stepwise deductive-inductive methodology (18). The objective was for the coding to be close to the empirical data, rather than coding by pre-selected topics. This produced approximately thirty inductive codes that the authors then discussed with a view to identifying code groups that were relevant for the article's research question. These codes were grouped thematically into five code groups. Many of the code groups overlapped, and we made a higher-order sorting that resulted in two main topics. Table 2 gives an overview of examples of bottom-up codes, code groups and the two main topics. The NVivo software package was used for the coding work.

Table 2

Overview of bottom-up codes, code groups and main topics

Examples of bottom-up codes	Code groups	Main topics
Dynamics in the crisis management team Clear distribution of responsibilities in the crisis team Authorisations and responsibilities Respect as a professional Creating confidence	Key role in crisis management	Premise-setter
Became a key element of the municipal administration From invisible to visible Large workload Meaningful role	Changes to the role during the pandemic	
Deviation from national guidelines Frustration and points for improvement Useful as information and tool	Relationship to national guidelines	Coordinator
Professional networks as key support Close collaboration with local agencies Importance of collaboration with industry	Networks as an important source of support in the work	
Regular communication with the public Trusted by the population	Dialogue with the population	

Prior to the start-up, the project outline including the information leaflet and consent form was approved by the Data Access Committee (DAC) in Møre og Romsdal Hospital Trust.

Results

In the analysis we arrived at two concepts that summarise the role of the district medical officer in the local management of the pandemic in the five municipalities included in the study: premise-setter and coordinator. The term 'premise-setter' refers to the district medical officer as a professional premise-setter to the crisis management team, which recognised and requested competence in community medicine. The district medical officer's role as coordinator includes work on infection prevention and contact tracing in the home municipality, coordination of measures across municipal boundaries and coordination of information, guidelines and measures across local, regional and national authorities.

Premise-setter

The crisis management teams in the five municipalities all had an operational core consisting of the mayor, the chief municipal executive, the district medical officer and relevant municipal executives. All described the collaboration as very positive and stated that the distribution of roles was clear. For example, one chief municipal executive (participant no. 8) stated that 'we distinguish between medical, political and administrative matters. These are clearly

defined, and we do not trespass onto another's turf. It works well as a symphony'. The mayor or the chief municipal executive served as the formal head of the crisis management team, and it was clear that the district medical officers, with their competence in community medicine, played a key part in the decision-making processes as a medical advisor in the crisis management team:

'From day one, we made it very clear that this was an area that would be based on professional considerations. The district medical officer was therefore given a key position [...] had a very weighty role [...]. The decisions that were made were very largely based on the advice she gave.' (Mayor, participant no. 5)

The district medical officer is described as a premise-setter for the decisions that were made by the crisis management team, since the challenges posed by the pandemic required measures that were based on a medical rationale. This role was strengthened by the authorisations in the Act relating to control of communicable diseases.

'In practice, the district medical officers have all authorisations, so it's up to them to make individual decisions. He chose to consult us along the way.' (Deputy chief municipal executive, participant no. 3)

The district medical officers experienced a marked change in their daily work as a result of the pandemic. All of them described a huge workload with long days and many meetings, and they referred to 'the pandemic as all-consuming' (District medical officer, participant no. 9).

The hotline scheme meant that 'we were constantly on standby' (district medical officer, participant no. 1). Despite the huge workload, the district medical officers ascertained that the work related to the pandemic had been a positive experience. Good collaboration, influence and recognition of their competence as professionals were cited as reasons.

'You received a lot of support and were respected for your professional status [...] I have very positive experiences from the collaboration with the municipality's administrative management and the mayor.' (District medical officer, participant no. 1)

The district medical officers' competence was requested both by the administration and the political leadership, and many of them felt that their participation in decision-making processes had made them more visible internally:

'From being an invisible infection control officer, I became highly visible vis-à-vis the political leadership in the municipality, i.e. the mayor, the deputy mayor and the emergency preparedness committee' (District medical officer, participant no. 1).

One district medical officer (participant no. 4) expressed it thus: *'I really believe that I have set the agenda. Of course with input from all the municipal executives who attended the meetings, but it wasIwho decided the direction.'*

The district medical officers had influence, and the quote illustrates the district medical officer's role as a professional premise-setter. This was described as a change from the time before the pandemic: *'Suddenly I was a very important part of the municipal administration'* (district medical officer, participant no. 1).

The decision-making processes consisted of the district medical officer presenting medical considerations and proposals for decisions in the crisis management team. These were then jointly discussed before a decision was made. The municipal council was not closely involved in the decision-making processes, but was kept updated:

'The crisis management team decided on immediate measures [...] And then it was largely about informing the municipal council about the situation and the measures that had been implemented.' (District medical officer, participant no. 9).

The rationale for this practice was the need to be able to operate quickly and effectively: *'[It] would have been far too arduous to go through long political processes'* (mayor, participant no. 13) and *'[I] have never heard from the local council that the decision should have been made there. They felt that the district medical officer was doing his job and acting on the basis of medical considerations, rather than for us in the municipal council to speculate'* (mayor, participant no. 2).

The municipalities in the study describe the practice of making decisions in the crisis management team as uncontroversial: '*There have never been any problems or questions in this regard. The mayor has kept the executive board informed [...] It has gone smoothly'* (deputy chief municipal executive, participant no. 3). When asked why there was little controversy regarding this practice, the reasons highlighted are trust and a shared understanding:

'The professional considerations and access to advice and guidance have been crucial, a high degree of trust. Politically, both locally and nationally, it is widely understood that during crises it is important to unite behind decisions and messages, even when we don't agree totally [...] to appear outwardly as being in agreement, and not to start discussions on whether different strategies should have been chosen.' (Deputy mayor, participant no. 10)

Coordinator

In their work on infection control and contact tracing, the district medical officers collaborated closely with a number of agencies internally in the municipality, such as nursing homes, schools, day-care centres and cleaners. This collaboration was described as crucial to maintain the operation of key functions in the municipality during the pandemic. The district medical officer was highlighted as a key coordinator in the management of the pandemic through information work and follow-up of infection control and contact tracing, within the municipality, vis-à-vis the general public and vis-à-vis private businesses that employed foreign workers.

'The district medical officer has had a low threshold for giving advice to all those who have asked: confirmations, foreign workers. The threshold for making a phone call has been extremely low both ways.' (Chief municipal executive, participant no. 6)

The reason for the trust in the district medical officers' advice is that they actively drew on various professional networks, both regionally and nationally. At the local level, the importance of networks between different district medical officers in adjacent municipalities was highlighted. These networks were described as informal and easily available:

'This informal contact was very useful [...] not least when there was quarantine and lockdown, very useful to hear how the neighbouring municipalities did it.' (District medical officer, participant no. 1)

The local networks were used to coordinate measures and recommendations in areas that shared housing and labour markets in order to ensure the safety of the population. Professional advice were not always pivotal for the decisions on measures to be taken. Other concerns, such as coordinating initiatives with neighbouring municipalities, were in some cases given priority. One district medical officer pointed to the 'southerners' quarantine' as an example:

'The decision to impose quarantine on those who came from southern Norway was made only to ensure that we would act in concert with others and avoid unrest [...] From a professional point of view I wouldn't recommend it [...] we should as far as possible act in concert with the neighbouring municipalities, so that our population will feel safer.' (District medical officer, participant no. 1).

National and regional agencies were also important for the work of the district medical officers:

'There was good communication from the government, the Norwegian Institute of Public Health and the Directorate of Health. Not least the meetings with the hospital trust and the county governor were important. Outstanding help and support, it made us feel on safer ground.' (District medical officer, participant no. 4)

The district medical officers based their work on information and guidelines from national and regional authorities. One main task was to translate and implement national instructions and guidelines to a local context:

'It needs to be adapted locally [...] We were in a completely different situation from that of the urban municipalities. So we needed to make local adaptations without coming into conflict with the regulations and recommendations from the central level.' (District medical officer, participant no. 1)

During the pandemic, a national network of community medicine experts was also used to share experiences and prepare written material and procedures. The 'southerners' quarantine' is an example of a measure that followed from discussions in the national network. This forum was also activated when the district medical officers as a group called for a joint statement to national authorities.

Discussion

The analysis showed how the district medical officers functioned as important premise-setters in decision-making processes, and that politicians and administrators described the district medical officers as their main advisors in the crisis management during the pandemic. The way in which the district medical officers functioned as coordinators between different actors and administrative levels was also highlighted.

The demand for expertise in community medicine exploded during the pandemic. In a crisis in which the municipal leadership had no standardised solutions to the challenges – a so-called wicked problem (1) – competence in community medicine was deemed critical to handle the pandemic. While the municipalities before the pandemic had mainly requested clinical advice (13), the demand for advice in community medicine now came to dominate.

As was the case in a study of local infection control measures in Norway (19), the district medical officers in our study had no formal leadership role during the pandemic, but they wielded substantial influence in decision-making processes as professional premise-setters in the crisis management team. This contrasts with the situation before the pandemic, where the district medical officers in the study by Fossberg and Frich felt excluded from decision-making processes (13). Our findings concur with other studies showing that the district medical officers played a key role in municipal decision-making processes during the pandemic (17, 20), and they had an important role in the municipal administration, in municipal crisis management and vis-à-vis the population (21).

The crisis management in the five municipalities was distinguished by good cooperation between politicians, administrators and medical experts, as was the management of the pandemic at the national level (10). The crisis management teams had great decision-making authority and enacted measures independently of the municipal council, and this practice was supported by a consensus in the municipalities included in the study. A positive atmosphere of cooperation and consensus is pointed out as one of the reasons for the successful handling of the pandemic by the authorities (7, 11). The authorities have emphasised establishing a shared understanding of the crisis and that a broad effort cutting across politics, sectors and populations was needed (11). This approach is in line with the way in which wicked problems need to be met, which is through cooperation and coordination between various actors, organisations and administrative levels (5). Our study as well as others point out the coordinating function of the district medical officer (7, 21). Our findings also show that through their coordination and translation of national guidelines to the local context, the district medical officers served as an important link between local, regional and national authorities.

COVID-19 has given the concept of crisis an added temporal dimension as a prolonged situation that becomes part of everyday life. For two years, the district medical officers have been included in key decision-making arenas. Participation in these communities may have developed relationships and knowledge about the district medical officers' expertise in community medicine that could promote their inclusion in professional questions and decisions also after the end of the pandemic. Other studies have shown that district medical officers felt challenged by the great decision-making responsibility during the pandemic (7, 20), since their function was not equipped and organised with a view to handling a pandemic of long duration (17). One lesson from the pandemic is to organise more appropriately to handle crises that extend over time in order to avoid overloading some functions (22). In light of our findings, we would also like to add that it is important to safeguard local democratic processes during crisis periods, while ensuring the need to act effectively.

The study represents a sample of members of the crisis management teams in five small and medium-sized municipalities in Norway. The findings are not generalisable to all municipalities.

Variation between municipalities means that there may be municipalities where the district medical officer was not included in the crisis management team, and there have been regional differences in the cooperation between the county governor and the municipalities (22). Despite these limitations, there is a strong coherence in the narratives about the district medical officers' role among the informants. Our results also concur with other studies, reports and academic discussions (7, 21, 23). On this basis, we believe that an understanding of the district medical officer as a premise-setter and coordinator during the pandemic is conceptually transferable beyond the municipalities that we have studied.

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