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What are the characteristics of district medical officers and how is their role organised?

ORIGINAL ARTICLE

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Background
National authorities want to strengthen the role of district medical officers during normal and crisis times. We wanted to investigate district medical officers' experience and specialisation, as well as the employment conditions and organisation of the role as a basis for assessing whether the aim of a strengthened district medical officer role is being achieved.

Material and method
We sent a survey to district medical officers in all Norwegian municipalities in autumn 2024.

Results
We received responses to the survey from 299 (68 %) of the 439 district medical officers in 235 of the 357 municipalities. Of these, 254 (85 %) were specialists or specialty registrars in community medicine. The proportion of full time contracted hours worked as a district medical officer was 50 % or less for 133 (44 %) of respondents, and 183 (61 %) had additional positions. In terms of organisational structure, 80 (27 %) district medical officers reported to the Chief Executive Officer of the municipality. Of the 211 district medical officers who reported to a manager other than the Chief Executive Officer, 156 (74 %) worked in the municipal sector for health. The district medical officer role did not have permanent involvement in the municipality's crisis management team according to 63 (21 %) respondents.

Interpretation
District medical officers have high levels of competence, but variations in employment conditions and organisational structure indicate that there are differences in the prerequisites for performing the role.

Main findings

85 % of the district medical officers who took part in the study were specialists or specialty registrars in community medicine.

61 % of the district medical officers held additional positions.

A fifth answered that the district medical officer role had no permanent involvement in the crisis management team.

The COVID-19 pandemic brought the role of district medical officers to the fore at both a local and national level (1–5). National authorities have subsequently highlighted the need for the district medical officer role to be strengthened (6) and for the organisational hierarchy and job description to be discussed at a national level (7).

In May 2025, the Norwegian Directorate of Health published the guidelines '*District medical officers – the municipality's organisation of the district medical officer role and community medicine work*'. The guidelines aimed to ensure adequate community medicine capacity, competence and continuity under normal circumstances as well as in crisis and preparedness situations (8).

Greater knowledge of the current situation is required to be able to assess how strengthening the district medical officer role can be achieved. Existing research has mainly been qualitative and based on a limited sample size in local contexts (3, 5, 9–11).

The new guidelines recommend that district medical officers should be specialists or specialty registrars in community medicine (8). A survey undertaken during the COVID-19 pandemic demonstrated that over half were specialists or specialty registrars, and over half had more than five years of experience as a district medical officer (12).

The Norwegian Association of Local and Regional Authorities and the Norwegian Medical Association recommend that municipalities ensure that the working hours of district medical officers are at least 50 % of a full-time equivalent (FTE) position (13). A lower percentage of FTE hours where district medical officers combine the role with other medical positions and activities, such as general practitioner or out-of-hours services, can result in the clinical work compromising the community medicine tasks (14).

Municipalities have autonomy over how to organise the district medical officer role. A key issue is the appropriate organisational structure (6, 8, 15). Both horizontal and vertical placement in the municipal organisational structure can influence the perception of the role and professional identity (9), as well as the involvement and utilisation of the district medical officer's expertise in community medicine (3, 5).

The guidelines point out the importance of an organisational structure that facilitates cross-sectoral working (8). The Norwegian Total Preparedness Commission recommends that the district medical officer should report to the

Chief Executive Officer (CEO) of the municipality (6). A consultation paper on the new Public Health Act recommends that smaller municipalities collaborate on the district medical officer role to improve the capacity, continuity and professional environment (16).

The objective of our study was to survey district medical officers in Norway – number, specialist competence, experience and employment conditions – as well as the placement of the district medical officer function in the organisational structure of the municipality.

Material and method

We conducted a survey of district medical officers in Norway in the period from 26 August to 8 November 2024. The study was presented beforehand at the annual meeting of the Norwegian Community Medicine Association in August 2024 and in a private Facebook group for doctors of community medicine.

The survey was aimed at district medical officers, chief district medical officers, assistant chief district medical officers, specialists in infectious diseases and/or borough chief medical officers and was emailed to all 357 municipalities via their central email inboxes (see Appendix 1 for the 22 questions included in the questionnaire).

Up to three email reminders were sent, with a telephone call as the final reminder. If no response was received, we obtained information about the district medical officer position from the municipality's website.

We estimated the total number of district medical officers based on the responses to the survey, the series of telephone calls and information on the websites of the municipalities. Descriptive data are presented as *n* (%) and mean (standard deviation).

The following variables were studied using bivariate crosstab analysis: Total experience (years) was crossed with each of the variables sex and number of years in current position; permanent involvement in the crisis management team was crossed with placement in the organisational structure (level 1: reporting to the CEO of the municipality, level 2: reporting directly to a municipal manager, chief of staff or similar, and level 3: there is a mid-level manager between the district medical officer and a municipal manager/chief of staff); and size of the municipality (population count) was crossed with each of the variables specialty, intermunicipal collaboration and which municipalities were represented. The relationship between the population of the municipality and the size of the district medical officer's role was tested using the Pearson correlation test with a 0.05 level of significance.

The questionnaire was created in Nettskjema [a web-based survey tool]. The population count per municipality on 1 January 2024 was obtained from Statistics Norway, comprising seven categories of population count: ≤ 1,999, 2,000–4,999, 5,000–9,999, 10,000–19,999, 20,000–29,999, 30,000–49,999 and ≥ 50,000 (cf. table number 07459 in Statbank Norway) (17). The dataset was processed and analysed using Stata.

Sikt, the Norwegian Agency for Shared Services in Education and Research, assessed the processing of personal data (notification number 278632). The survey was accompanied by a cover letter, and consent was obtained via the questionnaire.

Results

District medical officers in 235 (66 %) of the 357 municipalities took part in the survey in autumn 2024. Among the 174 municipalities with < 5,000 residents, 87 (50 %) were not represented. We estimated that the total number of district medical officers was 439, of whom 299 (68 %) responded to the survey (Table 1). Excluded from the study were three respondents who did not answer any of the questions.

Mean total experience as a district medical officer was 9 years (standard deviation 8), and 106 (35 %) respondents had 10 or more years. For 186 (62 %) district medical officers, the number of years of experience was the same as the number of years in the current position, so their experience was gained largely in the same municipality. Experience in the current position was < 5 years for 171 (57 %) respondents, of whom 34 had 10–19 years of prior experience. Distribution of experience by sex was as follows: 71 women (43 % of the women) and 43 men (33 % of the men) had < 5 years of total experience as a district medical officer, while 24 men (18 %) versus 13 women (8 %) had 20 or more years of experience.

The number of district medical officers who were specialists or specialty registrars in community medicine was 254 (85 %).

As regards the size of municipality, as indicated by the population count category, the distribution of these 254 district medical officers was as follows: 53 (21 %) worked in municipalities with > 50,000 residents, 19 (7 %) were in the category 30,000–49,999, 33 (13 %) in 20,000–29,999, 41 (16 %) in 10,000–19,999, 39 (15 %) in 5,000–9,999, 45 (18 %) in 2,000–4,999, and 22 (9 %) were in municipalities with < 2,000 residents (two did not record a category). Out of 43 district medical officers who were not specialists in community medicine, 36 (84 %) were in municipalities with < 10,000 residents.

In the smallest municipalities (those with population counts ≤ 1,999 and 2,000–4,999), 26 (70 %) and 41 (73 %) district medical officers, respectively, were specialists in general medicine, compared with 4 (20 %) and 17 (31 %) in the largest municipalities (population counts 30,000–49,999 and ≥ 50,000).

The multiple-selection question about specialties was answered by 297 district medical officers, with a combined 496 answer options.

The mean FTE percentage for the district medical officer position was 69 % (standard deviation 29) (Table 2). There was a significant positive correlation between the municipality's population count and the FTE percentage (Pearson correlation 0.25). All 27 district medical officers who had 20 % or less FTE percentage were working in a municipality with < 10,000 residents. The

number holding other positions alongside the district medical officer position was 183 (61 %), of whom 130 were general practitioners or in another position in general practice.

No substitute or deputy was available for 171 (57 %) respondents. The district medical officer role did not have permanent involvement in the municipality's crisis management team for 63 (21 %) of respondents. The proportion with permanent involvement in the crisis management team increased with the seniority of the respondents in the organisational structure: 57 out of 80 (71 %) district medical officers at level 3, 103 out of 131 (79 %) at level 2, and 71 out of 80 (89 %) at level 1.

Other organisational aspects of the district medical officer role, including intermunicipal collaboration and placement within the hierarchy and within sectors, are summarised in Table 3. A review of the free text answers suggested that much of the intermunicipal collaboration was related to environmental health protection, but also included collaboration on out-of-hours primary care services and infection control. Intermunicipal collaboration took place within all population count categories and varied from 25 % to 48 %.

There were two or more district medical officers in 68 (19 %) of the 357 municipalities. Of the 118 (39 %) respondents who answered that there were several district medical officers in the municipality, 74 reported that the organisational structure was horizontal (responsibility for different parts of the district medical officer role was divided up between the doctors) and 34 reported a hierarchical structure (one district medical officer had overall responsibility for the function).

Discussion

In this survey of district medical officers in Norway in autumn 2024, we found that 85 % were specialists/specialty registrars in community medicine. This compares to 58 % in 2020, and indicates a strengthening of competence in the municipalities in the form of an increasing proportion of officers specialising in community medicine (12). Competence in community medicine was relatively evenly distributed as regards size of the municipalities, but 36 of the 43 district medical officers without this expertise were working in municipalities with < 10,000 residents. A considerable number of respondents selected multiple specialties, which also supports the view that there is a high level of competence among district medical officers in Norway.

Women made up 55 % of respondents, and the profile was relatively young, with over half being under 50 years of age. Mean experience was nine years, and this was largely in the current position. This points to continuity and that many had experience of collaborating with municipal leadership during the COVID-19 pandemic. Previous studies suggest that this continuity and experience is conducive to the involvement of district medical officers in decision-making processes (5, 18).

Despite recommendations from the Norwegian Association of Local and Regional Authorities and the Norwegian Medical Association (13) that the district medical officer role should comprise at least 50 % FTE, we found that 1 in 5 district medical officers were employed with fewer hours. Over 60 % of the district medical officers had one or more additional positions, which may come at the expense of community medicine activities (5). Intermunicipal collaboration on the district medical officer role may reduce the number of positions with a low percentage of FTE hours and has been proposed as a way to improve capacity, continuity and professional environment (8, 16). Although 37 % answered that there was intermunicipal collaboration on some community medicine activities, relatively few district medical officers (12 %) were responsible for more than one municipality.

Organisational placement can have an impact on the involvement of district medical officers in decision-making processes (5, 6, 8, 9, 13). Our findings demonstrated variations in the vertical placement of district medical officers in the hierarchy (organisational level), but relatively little variation in their horizontal placement – 74 % at level 2/3 were in the sector for health. Previous studies have shown that district medical officers found it challenging to get involved outside the health and care sector (9, 10). It can be argued that district medical officers positioned above the municipality's sectoral divisions are better able to accomplish cross-sectoral work as they have better access to municipal leadership and forums where key decision-making takes place.

Since the pandemic, it is hard to imagine a new crisis that does not directly or indirectly involve health and community medicine. In view of this, the statutory responsibilities (8) and the contributions made during the pandemic in general and in crisis management in particular (2–5,13), we found it surprising that 21 % of district medical officers in the study did not have a permanent role in the municipality's crisis management team. Furthermore, 57 % did not have a deputy or substitute officer. This may indicate a slight decrease since the COVID-19 pandemic when 51 % of municipalities had appointed a deputy for the position (12).

According to our figures, there are 439 district medical officers in Norway, and we attained a response rate of 68 %. This indicates that the findings are representative and can be applied more broadly.

A limitation was that only half of municipalities with < 5,000 residents were represented in the study. On that basis, there may be an overestimation in our study of district medical officers' community medicine expertise, FTE percentage, whether they have a permanent role in the crisis management team and whether they have colleagues and a deputy/substitute officer.

This national survey of the employment conditions of district medical officers and their place in the organisational structure forms an updated, quantitative basis for evaluating the extent to which new guidelines for municipal community medicine work can contribute to increased community medicine capacity, competence and continuity both in normal circumstances and in crisis and preparedness situations (8).

Strengthening resilience in a prolonged crisis became a common refrain during the pandemic, and may be relevant for municipal preparedness. Future research should investigate how variations in organisational placement impact the district medical officer role and what this means for cross-sectoral work on statutory responsibilities. Since three in five district medical officers held additional positions, it would also be interesting to investigate how holding several jobs affects their district medical officer work. In light of the authorities' recommendations, further research is also needed into how intermunicipal collaboration on the district medical officer role works in practice.

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