



# Quality improvement work in general practice; a Norwegian focus group study

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## ABSTRACT

**Background:** Quality improvement work is an essential feature of healthcare services, including general practice. In this study, we aimed to gain more knowledge regarding general practitioners' (GPs) motivation for such work in their practices, as well as what kind of measures were considered motivating and feasible.

**Materials and methods:** We conducted five focus group interviews among Norwegian GPs between November 2021 and November 2022. We included 21 GPs of varying age, gender, experience, and geographic situation. The data were transcribed verbatim and analysed by Systematic Text Condensation, a thematic cross-case analysis.

**Results:** Many GPs had a diverse and imprecise understanding of the term quality improvement, and sound routines in everyday practice were often given as examples of quality improvement measures. There was a universal attitude that quality improvement initiatives should be close to practice, professionally relevant, and sufficiently small to be manageable. The availability of professional communities, either in the GP practices or in continuous medical education groups, was important for motivation. The role of nurses and health secretaries was highlighted as essential to achieve change. Participants commonly described negative reactions to programs that were imposed by external actors without regard for the GPs' perceived needs.

**Conclusion:** GPs were motivated for quality improvement measures provided feasibility within the framework of general practice. Well-functioning professional communities, including involvement of nurses and health-secretaries, were emphasised as requisite for quality improvement. Small scale quality improvement programs suited for the needs of general practice were well received and should be further developed.

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## KEYWORDS



Quality improvement; motivation; general practice; Norway; focus group; qualitative research

## Background

Quality improvement work (QIW) is an essential feature of all healthcare services, including general practice [1,2]. QIW in health services has been described as 'the combined and unceasing efforts of everyone—healthcare professionals, patients and their families, researchers, payers, planners, and educators—to make the changes that will lead to better patient outcomes (health), better system performance (care) and better professional development (learning)' [1]. The Model for Improvement, as described by Langley et al. [3], is a well-recognized framework for planning QI measures based on three core questions on accomplishing

improvement, determining improvements, and implementing changes. The *Plan-Do-Study-Act Cycle*, described by Deming, is an integral part of the Model for Improvement [3]. We have little knowledge regarding whether this model is considered feasible by the stakeholders in general practice.

Primary healthcare typically consists of small units without means designated to administration and development, and service owners often lack specific competence in quality improvement. In Norway, most GPs are self-employed working on a contract with their municipality. The municipalities are responsible for ensuring primary care services to their inhabitants, including the access to a GP [4]. As such, they are also responsible for

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the follow-up of the regulations on Leadership and Quality Improvement in the Health and Care Services stating that all health services have a duty to perform systematic quality improvement work [5]. However, there are no standard routines for how the municipalities ensure the quality of their GP practices. A study from 2019 found that Norwegian GPs welcomed engagement from the municipalities regarding QIW in practice [6]. Norwegian Municipality Chief Medical Officers (MCMOs) were positive towards and motivated for engaging in quality improvement in general practice, but experienced a lack of engagement towards such work from the municipality administration [7].

The *Model for Understanding Success in Quality* (MUSIQ) is a model for analysing QIW in clinical microsystems [8,9]. It emphasises a system's culture, capability, and motivation as important factors to achieve success in QI initiatives, and motivation is highlighted as the most important among these. The organizational structure of general practice in Norway is complex, with varying economic conditions and often undefined or unclear leadership structures [10]. The GPs both manage and deliver clinical care, with a constant time conflict between the two roles, making QIW more challenging than in hierarchical systems. A recent Norwegian study found that physicians in administrative positions were more often participating in QIW than physicians in clinical positions [11]. The study calls for qualitative data to gain more knowledge on factors that influence the participation in QIW among GPs. There is increasing evidence that, given the opportunity, physicians are generally positive towards QIW [11–13], despite previous claims of their lack of interest [14]. Physicians with designated time for QIW participate significantly more in such work [11].

In this focus group study, we wished to gain more knowledge regarding the following research questions:

- What are Norwegian GPs' thoughts on quality improvement work in their practices?
- What kind of quality improvement measures are perceived as feasible and motivating for the GPs?

## Materials and methods

### Data collection

We initially invited three established Continuous Medical Education (CME) groups from three different health regions to act as focus groups. CME groups usually consist of 3–10 GP specialists who meet regularly for professional development. Participation is mandatory for Norwegian GPs to keep their increased fees as specialists.

Following preliminary analysis, we invited two more CME groups to obtain a richer data material. We used our networks for purposeful sampling of participants. We aimed to recruit groups where one or more members were stakeholders in terms of working for the Medical Association, working with quality improvement, or were involved in academic work, but also groups with GPs with no special interest in the study topic. We invited groups with both self-employed and employed GPs, and we aimed for diversity regarding age and gender and groups from both rural and urban areas. The groups consisted of from three to eight participants, in total 13 men and 10 women, 20 were GP specialists with from 1 to 35 years' experience as GP. The age range was from 30 to 64, patient list size was from 580 to 1950 with a median value of 1125. The participants worked in three of Norway's four health regions, and both urban, rural, and mixed geographical areas were represented. The groups are described in Table 1. Some details are omitted to guard the identity of the participants, and respondents are given fictional first names.

We developed a semi-structured interview guide with open-ended questions, aiming to gather information on the GPs motivation for and experience with QIW (see Supplement). Initially, we asked for the participants general thoughts on quality improvement, after which the interviewers explained their understanding of QIW as described by the Model for Improvement [3] before continuing the discussion. The interview guide was used dynamically, with slight changes as needed to ensure sufficient and high-quality data. The first two interviews were performed by TBE and SH, with TBE leading the discussion and SH observing and commenting as needed. The last three interviews were done by TBE alone, as these required travelling and available resources did not permit two group leaders. The interviews were carried out between November 2021 and November 2022. Each group was only interviewed once, and the interviews lasted between 60 and 90 min. One group met at one GPs' home, the rest met at one of the GP practices. The interviews were recorded and transcribed verbatim. The interviews were deleted after transcription, and the transcripts were stored on a secure server.

Table 1. Focus group characteristics.

Group No	Number of participants	Geographical location	Age range	Male/Female
1	8	Mixed urban/rural	49–64	6/2
2	4	Rural	30–63	3/1
3	3	Urban	48–55	3/0
4	4	Urban	49–61	0/4
5	4	Rural	35–51	1/3

The authors translated the quotations used in the article from Norwegian to English.

TBE and HS are specialists in family medicine, working clinically as regular GPs. SH is a GP and leader of the Antibiotic Centre for Primary Care. All three authors are researchers at The Department of General Practice, University of Oslo.

### Analysis

The data were coded and analysed inductively using systematic text condensation (STC), a thematic cross-case analysis developed by Malterud [15]. All authors read all interviews and identified the main themes. TBE and HS coded one interview together, identifying meaning units and establishing a common understanding of an initial, flexible coding framework. TBE coded the remaining four interviews aligned with this framework, including new codes that emerged during the coding process. Finally, we omitted codes that contained four references or less from only one or two interviews from further analysis. We subsequently made text condensates from each code group, according to the STC method, which was used in the final reconceptualization and synthesizing of the results.

The article is written in line with the Standards for Reporting Qualitative Research (SRQR) [16]. We used NVivo12 software for analyses.

### Results

Through a reflexive analysis process, we reached a common understanding of three main themes regarding GPs' motivation for QIW and their engagement in such work:

- A diverse and imprecise understanding of the term quality improvement makes both discussion and implementation more difficult.
- Quality improvement initiatives should be close to practice, professionally relevant, and manageable.
- The availability of professional communities and leadership are important factors for motivation and implementation.

These themes will be further elaborated in the following.

#### **A diverse and imprecise understanding of the term quality improvement**

##### **A confusion of terms**

A striking finding was a repeated confusion in all focus groups as to what could be defined as quality

improvement work. During the interviews, we initially asked what the participants thought of when they heard the expression *quality improvement work*. The answers often focused on organisational issues. Routines in everyday professional life, e.g. practice meetings for discussion on practice routines or active communication with their employees, were quite universally considered as QI measures. Happier employees were considered a quality improvement.

*Ben: I have a 10-minute coffee break, 15 or even 20 minutes with the secretaries every morning mostly. Before it all starts. And I actually think that's really valuable, you know, to kind of gauge the pulse and pick up things and make changes, whether it's a headset or a trackball mouse or whatever the heck...*

*Richard: It's about being seen, right?*

*Ben: Yes. And it's like informal, informal quality assurance work, which I hadn't really thought about before we sat here now (laughter).*

*(Dialogue between two men, both aged 55. Group 3)*

Theoretical concepts of QIW were unfamiliar to many participants. Some had never heard of them, while others knew of them but felt that they were difficult to carry out in practice without assistance. The concept of measuring change, which is a common concept in QI theories, was seen as difficult, either because they didn't have measurements preceding a change or because they didn't make plans to register improvement when a change was implemented.

##### **Put my own house in order**

QIW was by many seen as mainly pertaining to the organisational part of running a practice, something on a more superior level than the clinical work. By 'putting their house in order', they gained the freedom and safety to work well in their role as GPs. As for clinical work, the development of internal systems and templates were described as QI measures by helping to remember important parts of clinical evaluation, as well as to avoid system errors, e.g. related to test results or lack of available appointments.

*Meghan: The first thing that comes to mind is to have a sort of order in my own house, on multiple levels. But the first immediate aspect is to have the journal in order, to have a system that makes it easy to find things again, and... umm... yes, organized medication lists and that kind of thing, essentially what you said. But also a bit on a systemic level, regarding colleagues, having routines, ensuring things get done, knowing that they are being done, followed up on, and that nothing is missed or falls through. (Woman 48, Group 5)*

Different IT systems' role in quality improvement was a recurrent topic, and such systems could be perceived as both helpful and harmful to QIW and the quality of the services. A well-functioning electronic patient record (EPR) system that easily produced overviews of clinical activity increased the motivation for QIW.

*Freddy: We changed our data provider, and that software has made me step up my game. It's the first time that a quality improvement tool is up and running, that we can say we have this, and it works. (Man 48, Group 3)*

### **Close to practice, relevant, and manageable**

#### **Small scale QI increases motivation**

Many respondents underlined the need for QI projects to be manageable within the framework of general practice. It should be possible to do within working hours and be relevant to general practice. If it becomes too complex or time demanding, the risk of project failure increases. Some participants suggested a bank of ideas where colleagues or policy makers could share examples of successful micro-projects, for easy implementations by others.

*Richard: But I believe that it's extremely important that the projects you initiate are really really small, micro-projects, that are such that... it doesn't take any effort at all to just give it a try. (Man 55, group 3)*

#### **Forced down the throat**

Participants commonly described negative reactions to QI projects that were imposed without the possibility to voice their experienced needs. Compulsory participation in such projects created even more negative feelings and decreased motivation. Automated reminders from the Norwegian Health Economics Administration (Helfo) regarding the correct use of fee-for-service codes were by several participants experienced as an unfriendly and annoying provocation, rather than a good opportunity for QI.

*Sophie: If a municipality or someone else were to come and override me, I wouldn't like that. I would be negative about starting such a project. (Woman 55, Group 4)*

**Change is difficult but also fun.** Several informants maintained that changes, whether in organisational routines or clinical practice, are often difficult, and this constitutes an obstacle to quality improvement. Initiatives to QI projects met with negativity from colleagues or employees led to less enthusiasm for future projects. While several mentioned that QIW is

seen as boring and theoretical, some had experienced it as fun and rewarding as long as it could be done within working hours, and led to visible changes. For many, the thought of QIW was a constant bad consciousness because clinical work always takes priority.

*Jim: "To start change processes, that can be heavy... A system where, like, people have worked in the same way for a long time and then try to create change, I have to say, that's really not easy!" (Man 54, group 1)*

#### **Externally offered courses and tools can motivate, especially when using participants' own clinical data.**

A common attitude was that it was too difficult and time consuming to develop QI projects and tools themselves. There was however a universal positivity towards externally offered tools as long as they were relevant and manageable. Many had positive experiences with courses using clinical data from their own practices. Participation in such courses via the Antibiotic Centre for Primary Care and the Norwegian Centre for Quality Improvement in Medical Practices was described as both fun and useful. The respondents found it easier to use a 'recipe' for QI rather than to construct a QI project themselves. Non-compulsory offers of access to information regarding their own clinical data, especially if combined with the opportunity to discuss the data with colleagues, were seen as positive and educational. Several mentioned the only established comprehensive digital QI tool for general practice in Norway, TrinnVis [17], as necessary to fulfill official demands but otherwise difficult to integrate into their practices.

A few had experienced QI measures where stakeholders visited individual GPs and discussed their practice details (e.g. regarding prescription of certain medications). Although a bit intimidating, this was seen as useful and change inducing. Such visits sometimes shed light on improvement potentials they were not aware of beforehand.

*Interviewer: So how do you change habits that you realize are probably not expedient?*

*Chris: To be made aware of it is probably the most important thing.*

*Marion: I think maybe seeing it in numbers and statistics, like for example antibiotic usage overview or statistics of sick leave, would be most useful. And to compare yourself with...*

*Chris: Basically becoming aware that your practice deviates from the average.*

*Marion: Yes. Or comparing... yeah. (Dialogue between interviewer, man 45 and woman 30. Group 2)*

## **The availability of professional communities and leadership are important factors for motivation and implementation**

### **The importance of a professional community**

A recurrent theme among the participants was the need for and motivating effect of a well-functioning professional community. This was mentioned both as regards the GPs in the practice or the CME group, as well as in conjunction with the nurses and secretaries employed in the practices.

Several participants mentioned that working with colleagues with the same attitude as themselves towards professional development and QIW was an important motivator and could create a feeling of a common responsibility for creating a good practice that delivered high quality services. The feeling of pulling in the same direction and having a common project, either in practice or in the CME groups, was a strong motivator. On the other hand, there were examples of how working with colleagues with other attitudes than themselves could impede the introduction of quality improvement measures.

*May: The challenge is the offices where you don't get people on board, you know, and if you can't do it in the CME group either, then... So, in that sense, well... the CME group should actually be the place where you can do these things if you need to, if you can't make it work in your practice. Because otherwise, there really aren't any other communities. (Woman 49, Group 4)*

There was a unison opinion among the participants that the nurses and health secretaries working in GP practices are indispensable when it comes to achieving change. This was mainly underlined in relation to the organisational aspects of practice. Several mentioned that the employees were the ones that had the best overview over the improvement needs of the practice. A common opinion among our participants was that the employees were largely positive to QI measures as long as they felt included and involved, and some mentioned that the employees were often better at QI measures than the doctors were. A couple had experienced more difficulties in involving the nurses when the GP themselves were employed by the municipality, as the GP did not have a formal leadership role for the nurses.

*Richard: In my experience, they are very willing to change and think it's really exciting to be allowed to be involved in processes like this. It's their workplace after all. And as we were talking about earlier, I probably see my medical secretaries more than I see my wife, like all over. So, you know, we're really like a big family, and if they're included and taken seriously, I believe... Without that, the quality*

*improvement efforts at the centre would collapse. (Man 55, Group 3)*

### **Leadership is difficult in a system where most GPs are self-employed**

A recurrent theme in our results was the complicated relations between the organisation of Norwegian general practice and the need for cooperation with your colleagues when striving to improve practice. Many respondents mentioned that since most GPs are self-employed, and there is no formal leader in many GP practices, it can be difficult to implement QI projects if not all colleagues are enthusiastic about the project. The many organisational tasks of running a practice as self-employed also made it challenging to prioritize QI. A few participants with experience as municipally employed GPs reported other leadership problems; since they did not have a leader role towards the secretaries and nurses, implementation of QI measures was more difficult.

Some of our participants took advantage of their independent role to launch individual improvement measures in practice. For instance, several participants had constructed templates that saved time in clinical practice, for both themselves and the secretaries. In line with this, time efficient work was an important motivator for QI. However, almost all respondents mentioned lack of time as a main demotivator for QIW. They did not see a possibility for such work during ordinary working hours, many mentioned that this would come with an economical loss. They found it unsatisfactory to spend their spare time on quality improvement projects.

*May: You're supposed to both assess the practice, provide competent care, understand social codes, and suddenly be a leader. I mean, you're... it's operated like a joint stock company or partnership or whatever it is, and all the doctors are joint leaders, and then you're supposed to somehow fit into a system. It's seriously an incredibly big challenge to start working in a GP practice, and it makes it a lot easier if things are a bit systematized. But... I still haven't been to a GP office where it's been very structured. (Woman 49, group 4)*

Most participants felt that the municipal chief medical officer (MCMO) should be engaged in the quality improvement work in the GP practices, as they have the professional responsibility for the municipal medical services, but there were very varied experiences with such engagement from the MCOM. Many expressed that they did not expect or wish for the MCOMs to cheque on the clinical, patient related work. Some participants expressed a wish for support

regarding some of the organisational parts of running a practice, and that some quality measures should be the same for the whole country.

*Amir: I'm not sure if MCMOs have much knowledge about running a GP office at all, after all they are public health specialists, I don't know what they're supposed to... I'm very uncertain about how they're going to contribute, at least.*

*Karen: I think it really depends on the individual MCMO. (Dialogue between man 57 and Woman 50, Group 1)*

***It can be unnerving to expose yourself.*** In courses and QI measures where participants compared their own practice with that of others, it could feel a bit scary to show others how you handle the clinical work. Even so, many had experienced that although unnerving, it was also very valuable to compare their practice to that of others. Several participants underlined that they themselves did not experience such comparison as difficult, since they felt secure in their professional communities and CME groups, but they could however imagine that it would be scary for others.

Some worried that QI measures and courses that collected and presented individual clinical data could be used or abused in the wrong setting, and they pointed out that patient lists could be very different and hence not comparable.

*Marion: I think some might find it difficult... I wouldn't have any problems with it, but I believe some be reluctant about such things.*

*Francis: Mmm. How will I be exposed today, sort of (laughter)*

*Marion: Yes, or that feeling... Some might feel like, yeah, they're sort of personally laid bare.*

*Chris: Is it possible that even though it felt uncomfortable, you gain tremendous learning from it? Like, oh wow, I actually prescribe three times as much benzodiazepines as everyone else to those over 70.*

*Marion: Yeah, yes, I actually think that would be most useful. (Dialogue between Woman 30, Man 34, and Man 45, Group 2)*

## Discussion

We found that although the participating GPs did not have a clear understanding of how quality improvement differs from good clinical practice, and although the participants were largely unfamiliar with theoretical QI frameworks, there was a universal motivation for improving their practices. The concept of quality improvement was to a large degree perceived as relating to the

organisational part of practice, and the role of nurses and health secretaries was highlighted. The lack of formal leadership in most practices was seen as a difficulty for implementing change. Participation in practises or CME groups with a good sense of teamwork contributed strongly to motivation for and feasibility of QIW.

The participants were consistent that QI initiatives, either internally motivated or supplied from external actors, should be limited in size, take into account the working style of GPs, provide methods for measurement of change, and preferably give the opportunity to involve a group of professionals, e.g. CME groups or whole GP practices.

## Strengths and limitations of the study

In order to obtain an adequate number of participants in this qualitative study, we were guided by Malterud et al.'s concept of Information Power [18]. Although the study aim was relatively broad, the participants were highly relevant due to their diverse age, background, list sizes, employment status, and geographical location across the country. The dialogue was strengthened by the fact that the main interviewer (TBE) has a long experience as GP and practice owner, allowing for easy understanding of the GP-specific problems addressed in the discussions. The use of established CME groups ensured a safe setting for the participants. However, the use of established groups prevented us from being able to control the size of the groups. One group contained eight participants, while the others had 3–4 participants (Table 1). Although 3–4 participants are less than commonly recommended in focus groups, our experience was that the discussion in these smaller groups were richer and more easy flowing than in the larger group. The interview process was not guided by predefined theoretical concepts, although such concepts were utilized to interpret the findings. The analysis strategy was that of cross-case analysis, which increased the needed number of participants. We did a preliminary coding after three interviews and chose to add two more groups to ensure sufficient data. Considering the above, we are of the opinion that we reached sufficient information power in our study.

Two of three authors had broad experience with qualitative research including systematic text condensation, whereas one author had little previous experience. This ensured dynamic and valuable discussions during the coding process, and a methodologically sound analysis.

There is a risk of confirmation bias, as the authors may have had preconceived notions of expected

results given their backgrounds as GPs and researchers within the field of general practice. SH is also a leader of the Antibiotic Centre for Primary Care and has developed QI courses for use in CME groups. To address this risk, we were mindful of our possible preconceptions during the interviews and coding process. However, our experience also facilitated productive discussions and understanding with the participants.

Moreover, there is a risk of response bias, as participants may have unconsciously given answers that they expected would be well received. We believe that conducting focus groups, as opposed to individual interviews, helped mitigate this risk. Additionally, we strived for open-ended questions and non-judgemental responses from the interviewer.

### Comparison to existing literature and implications of the study

Quality improvement pioneer W.E. Deming described the need for *Profound Knowledge* to develop changes that result in improvement [3], and our results may actualise this. Deming defined profound knowledge as four parts that all relate to each other: (1) Appreciation for a system; (2) The understanding of variation; (3) The building of knowledge; and (4) The human side of change. We will discuss this further in the following.

Our participants described how motivation decreases when externally initiated quality improvement measures do not appreciate the specific framework of general practice. They underlined that they as practice owners have many different roles and that QI measures need to be very small scale to be feasible. Some external actors provided QI measures without due consideration for perceived needs among the GPs, thus invoking negative associations with QIW. This illustrates the need for knowing and appreciating the system you address when working with quality improvement.

Many of our respondents were very positive towards QI measures that used clinical data from their own practices, e.g. regarding prescription of different medications. However, there was a worry that such data may be used wrongly if one does not have proper knowledge of the system of patient list and how variation outside the GPs' control affect clinical practice. Variation through the seasons as well as variation caused by societal factors may cause variations in clinical practice, and when measuring change in practice it is essential to have knowledge regarding these effects. Our results suggest that it is equally important to ensure the subjects in QI projects that such knowledge is present and continually considered.

The third point in Deming's system of profound knowledge, the building of knowledge, comprises the classical improvement tool, the Plan-Do-Study-Act (PDSA) cycle [3]. It encompasses the need to identify necessary changes, predict what the changes will lead to, and evaluate whether an implemented change led to the predicted changes. With our results in mind, improvement measures for general practice should probably to a larger degree take into account the paucity of knowledge about improvement theory among most GPs. Furthermore, many do not have sufficient time to organise such structured improvement work. Externally provided improvement tools should therefore strive to provide a method for measuring change. A popular Norwegian example of this is the QI programme *More Correct Antibiotic Use in the Municipalities (RAK)* [12,19], which many of our participants mentioned as a positive and meaningful experience.

The human side of change is the final part of the system of profound knowledge. Behaviour is strongly affected by motivation, and intrinsic motivation is a stronger force than extrinsic motivation. Hence, it is important to gain knowledge regarding the factors influencing motivation among relevant stakeholders in an improvement program. In our study, it was widely stated that a lack of strong professional communities with a clear leadership was a hindrance in the efforts to implement improvement measures. Many mentioned bad conscience stemming from not having the time to prioritize QIW, while some had positive experiences with the feeling of community in their practices, and related this to successful QI projects. Some participants were worried that stakeholders who did not understand the particularities of general practice could misuse their data. In Deming's Model for Improvement, it is underlined that participants in improvement projects must be reassured that data will not be used for judgement, only for learning.

Many of our participants were positive to projects involving clinical data from their own practices, provided that these data were used in a way that showed understanding of the specific framework of general practice. This is in line with a recent Norwegian study, where almost half of a random selection of GPs were positive to receiving an individual feedback report on patients' experiences, which could be used for practice evaluation and improvement [20]. We found positive attitudes towards all types of externally provided improvement measures, assuming they were easily accessible, small-scale, relevant for practice, and preferably free of charge. A good example of such a QI measure is *The Norwegian Quality Improvement of Primary Care Laboratories (Noklus)* [21]. This system provides

free and easily accessible tools to ensure the quality of point-of-care testing in GP practices and was mentioned by several of our participants in positive terms. An international comparative study from 2021, looking at implementation of point-of-care testing in general practice, underlines the need for a good leadership structure, exemplified by Noklus, to implement such testing with acceptable quality and safety [22].

General practices may be described as the smallest entities—microsystems—within our health services. *Clinical Microsystems* (CMS) have been described as the building blocks of health systems [23]. Institute for Healthcare Improvement (IHI) describes them as a small, interdependent group of people who work together regularly to provide care for specific groups of patients [24]. Although the CMS approach was originally mainly used in the context of hospital services [25,26], it has increasingly been employed as a theoretical foundation for QIW in general practice [27–29]. In the Norwegian system, each GP is an independent organisation in most cases, thus each GP together with a patient form the smallest microsystems. Our results show that QIW is not feasible if each GP must implement his or her own projects. QI systems that are constructed and led by external actors, adapted to small scale GP reality, and are possible to implement in a GP practice as a whole, can alleviate this issue.

We found that unclear leadership structure in municipal GP services was seen as a hindrance for QIW, and there were both positive and negative experiences with MCMOs engagement in such work. Consistent with our findings, a recent study reported that Norwegian MCMOs perceive their role as poorly defined and experience little engagement from municipal leaders [30]. An improved communication between GPs and MCMOs, as well as a clearer definition of the MCMO's role, could potentially enhance the feasibility of implementing QI measures in GP practices.

Grol et al. stated in 2009 that 'Implementing systems for measuring and improving quality is seen as one of the most important challenges in general practice today' [31]. It seems that we still have some way to go to establish a framework for QIW that is feasible, relevant, and adapted to the organisational challenges of Norwegian general practice, and possibly in health systems with a similar organisation.

## Conclusion

GPs in a setting with mainly private practices on contract with the public health system were motivated for quality improvement work in their clinical practices and were positive towards externally provided quality

tools, provided these tools take into consideration the organisational reality of general practice. The GPs emphasised well-functioning professional communities, including the involvement of nurses and health-secretaries, as a requisite for good QI work.

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## Ethical approval

All participants gave written informed consent to participate. According to the Norwegian Health Research Act, approval by the Regional Committee for Medical and Health Research is not needed for research on QI when no patient data are involved [32]. The Norwegian Centre for Research Data NSD (reference 836120/2021) approved the study.

## Disclosure statement

SH is a leader of the Antibiotic Centre for Primary Care and has developed QI courses for use in CME groups. Otherwise, the authors report no competing interests.

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