



Lessons learnt from nursing home and homecare managers' experiences with using the SAFE-LEAD guide

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Abstract

Background: In the SAFE-LEAD intervention we implemented a research-based guide (paper- and web-version) for managers to support their quality improvement work. This paper explores managers' experiences with the SAFE-LEAD guide, and key factors of relevance for sustainability.

Methods: Four Norwegian nursing homes and four homecare services participated, and 36 workshops with managers working together with researchers on the guide were conducted. After the intervention, nine focus groups with managers were conducted. Systematic text condensation was used for analysis.

Results: Managers perceived the guide as useful in their quality improvement work. It helped create a systematic approach and overview of improvement activities. The guide supported collaborative reflections, awareness and fitted with their daily work. Most preferred the web-version, but technical adjustments were required to ease its use. Prioritization, anchoring, super users, and local adjustments were key factors for sustainability.

Conclusion: Key factors for successful implementation were adapting the guide to the local context, access to supporting learning tools, thorough anchoring, acknowledging its benefits, and prioritizing. Further implementation studies should take technological maturity, ongoing changes and reorganizations in the sector and units into account. Careful planning and timing of the intervention, involving all relevant stakeholders at an early stage, is important.

Keywords

Quality improvement, implementation, leadership, nursing home, homecare services

What is already known on this topic?

- Managers play an important role in quality improvement work
- There is a limited knowledge of managers' experiences with tools to support them in their quality improvement work

What does this study add?

- The SAFE-LEAD guide seems to be a useful tool for managers in their quality improvement work
- Well-designed digital tools that are co-designed with users and can be adapted to local contexts are preferred over non-digital versions by managers in nursing homes and home care services

Introduction

“Although all improvement involves change, not all changes are improvement”

(Batalden & Davidoff, 2006, p. 2)

There is a growing realization that commitment of an organization's management is necessary to be able to improve quality and safety in healthcare (Botwinick et al., 2006; Künzle et al., 2010; Parand et al., 2014). Systematic reviews address the importance of managers in building sound patient safety cultures (Sammer et al., 2010), and that leadership is related to quality of care and a number of patient safety outcomes such as medication errors, mortality and incidents (Sammer et al., 2010; Sfantou et al., 2017; Wong et al., 2013). A previous meta-analysis showed a positive influence on organizational outcomes by involving managers in well-designed implementation and managerial training programs, especially if the programs are offered to the right people at the right time (Collins & Holton, 2004). Managers play unique roles in setting strategic goals, facilitating necessary actions and removing barriers within the organization to achieve the goals, align demands with available resources, and ensure that the workforce and organization know practices central to promoting patient safety (Botwinick et al., 2006). However, there is a lack of knowledge on how best to design interventions that can support managers in their quality improvement work (Johannessen et al., 2019; Wiig et al., 2018).

Most previous research on implementation of quality and safety improvement interventions is conducted in the specialist healthcare sector, especially in hospitals (Wiig et al., 2018). Increasing pressure on the primary care setting, due to medical advances, reforms in the health care services, and longer life expectancy, requires more research focused on settings such as nursing homes and homecare services. In Norway, national programs, guidelines and policies focus on managers' responsibilities in building patient safety cultures and ensuring appropriate quality and safety improvement programs (Ministry of Health and Care Services, 2016; Skjellanger et al., 2014; the Norwegian Directorate of Health, 2019). These national initiatives highlight the necessity of paying more attention to and initiating more quality improvement efforts in the primary care setting. There is thus a call for increasing the competence of healthcare managers in these areas and provision of better tools to support and guide managers in their quality and safety work. We have limited knowledge of managers' experiences with such tools (Ministry of Health and Care Services, 2014; Wiig

et al., 2018). The aim of this study was to evaluate part of the SAFE-LEAD intervention, a research-based guide for managers to support them in their quality improvement work (Johannessen et al., 2019; Wiig et al., 2018).

The SAFE-LEAD Primary Care project

This study is a part of the overall project ‘Improving Quality and Safety in Primary Care – Implementing a Leadership Intervention in Nursing Homes and Homecare’ (SAFE-LEAD Primary Care) (Johannessen et al., 2019; Wiig et al., 2018). During the project period (2016–2020), we developed and implemented a research-based guide for managers (the SAFE-LEAD guide) to guide them in their quality improvement work (Johannessen et al., 2019). This paper focuses on the evaluation of the guide.

The *SAFE-LEAD guide* helps managers to systematically identify the strengths and weaknesses of their improvement approach and reflect on what is needed to advance their efforts, tailored to their particular institution and context. The guide is structured around seven quality challenges: structure, coordination/organizational politics, culture, competence, engagement, external demands, and physical design/technology as shown in Figure 1 (Bate et al., 2008; Johannessen et al., 2019). The guide builds on results from the EU FP7 QUASER project that developed a hospital guide based on empirical findings from hospitals (Andersen et al., 2019). The SAFE-LEAD project translated and adapted the guide to the Norwegian nursing homes and homecare context (Johannessen et al., 2019; Wiig et al., 2018). The guide advocates a three-step process (Fig. 2), where managers start by rating themselves on the seven challenges, and then decide which quality improvement challenge(s) they will focus upon (Step 1). They then select goals related to the specific challenges (Step 2), and finally develop specific action plans to address the goals (Step 3). The guide was available in a paper-based version (booklet) and as a web-tool. The web-tool contained the same content as the paper-based version, and both provided the capacity for recording and storing data, including the ability to use that data to evaluate performance over time (Johannessen et al., 2019).

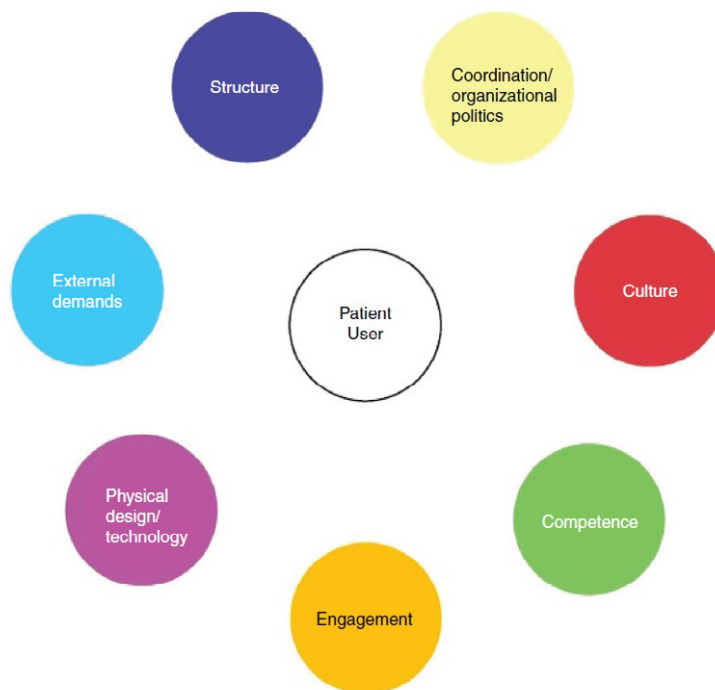


Figure 1 The seven challenges of quality improvement

(Johannessen et al., 2019)

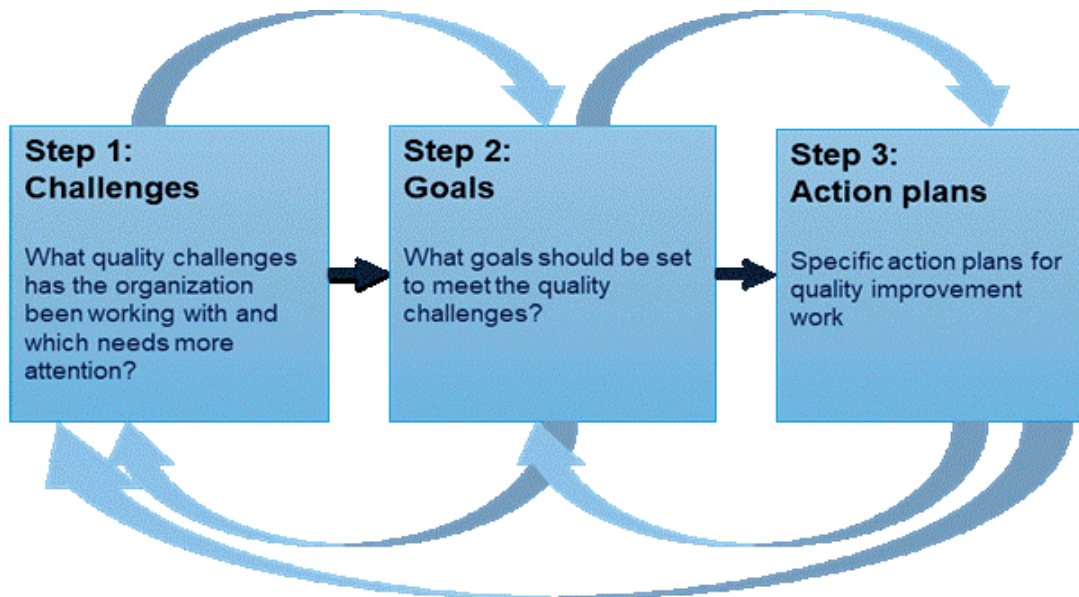


Figure 2 The three-step process in the SAFE-LEAD guide

(Johannessen et al., 2019)

The leadership intervention was conducted in two stages in four nursing homes and four homecare services (Table 1). All eight units participated in Stage 1 lasting about six months (April–Sept 2018), while four of the units (two nursing homes and two homecare services) participated in Stage 2 over a one-year period (April 2018–March 2019). The intervention program consisted of workshops, site-visits, e-learning material, demonstration videos, and studio lectures to support the implementation of the guide.

Stage 1 was a training component involving workshops in which management teams applied the SAFE-LEAD guide and conducted a self-diagnosis of their current quality and safety work. Researchers facilitated reflexive group discussions in four group workshops (two hours each) in all participating units. During these workshops, the paper-based and the web-tool versions of the SAFE-LEAD guide were introduced (rationale, concepts, web-tool, procedure).

In Stage 2, two nursing homes and two homecare services (from the total sample of eight units) received a more comprehensive intervention, which involved an in-depth improvement process in close collaboration with the researchers. Researchers conducted site-visits during meetings, seminars and workshops where quality and safety were topics, and discussed with managers subsequent to the meeting on how to go about their further quality improvement work using the SAFE-LEAD guide.

Aim and research question

The aim of this evaluation was to identify the lessons learnt from managers' experiences using the SAFE-LEAD guide and key factors for supporting the effectiveness and sustained use of the guide by managers.

The following research questions guided our evaluation:

- How do nursing home and homecare managers experience using the SAFE-LEAD guide in their quality and safety improvement work?
- What factors do nursing home and homecare managers identify as important for continuing to use the SAFE-LEAD guide?

Methods

We conducted a one-year process evaluation, and this study reports from the qualitative component using a qualitative explorative design (Moore et al., 2015; see Wiig et al. 2018 for detailed description).

Recruitment and sample

Nurse-counselors from the Centre for Development of Nursing Homes and Homecare (USHT) who are involved as co-researchers in the SAFE-LEAD project recruited the eight units. Selection criteria were that the municipalities and units should vary in size and geographical location (urban/rural), to account for differences in context (Johannessen et al., 2019; Wiig et al., 2019). A total of five municipalities and eight units (four nursing homes and four homecare services) were recruited (Table 1). The sample consisted of 31 participants (four males and 27 females), including unit managers, department managers and professional development nurses.

Data collection

We conducted a total of six focus groups after Stage 1 ($n=30$) in all eight units (Sept/Oct 2018), and three focus groups after Stage 2 ($n=16$) in four of the units (March 2019) (Table 2). All interviews were conducted at participants' work sites by two researchers (one moderator and one observer). The interview guides used at the two stages were similar, with questions relating to how managers experienced the intervention and the leadership guide, including questions related to sustainability. All interviews were audio recorded and transcribed by a professional transcription service. In addition, observation notes from the intervention workshops were taken by the researchers. We conducted a total of 36 workshops (70 hours) during the intervention period.

Table 1 Setting, intervention timeline and data collection. Blue collar represent stage 1 and pink collar represent stage 2 of the intervention.

Municipal (M) size (ca N of inhabitants)	Units	April - sept 2018	Sept 2018	Oct 2018 - March 2019	March 2019
M1 (< 5000)	Nursing home 1	Workshops ^a 4 (8 hours)	Focus group (n= 3) ^a		
	Homecare 1	Workshops ^a 4 (8 hours)	Focus group (n = 3) ^a		
M2 (5-10 000)	Nursing home 2	Workshops 4 (8 hours)	Focus group (n= 4)		
	Homecare 2	Workshops 4 (8 hours)	Focus group (n= 5)	Workshops 2 (4 hours)	Focus groups (n= 4)
M3 (135-140 000)	Nursing home 3	Workshops 4 (8 hours)	Focus group (n= 8)	Workshops 2 (4 hours)	Focus groups (n= 8)
M4 (70-75 000)	Homecare 3	Workshops 4 (8 hours) ^a	Focus group (n = 5) ^a		
	Nursing home 4	Workshops 4 (8 hours) ^a	Focus group (n= 5) ^a	Workshops 2 (2 hours)	Did not conduct focus group
M5 (15-20 000)	Homecare 4	Workshops 4 (8 hours)	Focus group (n= 5)	Workshops 2 (4 hours)	Focus groups (n= 4)
Total	8 units	28 (56 hours)	6 (n= 30)	8 (14 hours)	3 (n=16)

^aIn Municipal M1 and M4, nursing homes and homecare participated in the workshops and focus group interviews together at Stage 1 of the intervention.

Data analysis

We used Systematic Text Condensation (STC) to analyze the data (Malterud, 2012). This is a thematic, cross-case analysis strategy, consisting of four phases:

1. Establish preliminary themes by reading, and form a total impression of the data material
2. Identify meaning units related to the preliminary themes and sort them in code groups
3. Condensate the content in the code groups to provide meaning, and sort the meaning units in each code group in subgroups, and
4. Reconceptualize and synthesize the content of the condensates to present a meaningful description of each result category

To establish preliminary themes in Phase 1, all data were used, including observation notes from workshops and focus group transcripts. For the systematic analysis process in Phases 2 and 3, only data from focus groups were used to be able to closely reflect participants' descriptions, perceptions and experiences. However, observation notes were used to support and illuminate these results when synthesizing the data in Phase 4. ER had the main responsibility for the analysis, in cooperation with SW. Table 2 displays an excerpt of the analysis process. In this setting, the professional development nurses were part of the management teams in the quality and safety work using the SAFE-LEAD guide, and we have therefore referred to all participants as managers in the result section. There were no apparent differences in the experiences and opinions of participants based on their management level, and the management role is therefore only specified in direct citations.

Table 2 Excerpt of the analysis process using Systematic Text Condensation

Preliminary themes	Code group	Subgroups	Condensate	Result section
Awareness Reflections Overview Systematics	Managers considered the guide useful in their daily quality work	Good structure, concrete and create systematic Apt, practical tool that fit into the daily quality work Raise awareness, creating collective reflections	Excerpt from the subgroup «Good structure, concrete and create systematic»: <i>The guide becomes like an umbrella for the quality work we do. I think it was very useful, a neat way to do it. I liked the layout. With this guide, we systematize better what we do. The structure of the guide itself was very good and has helped us to work systematically with improvement work. We have worked with quality, continuity and patient safety, and we have various computer programs to help us here and there, but this guide was something else.</i>	Excerpt from the subgroup «Good structure, concrete and create systematic»: <i>The guide was perceived as overarching for the managers' quality improvement work. The managers liked the structure of the guide, saying it was useful and neat, and helped them to work systematically with improvement work. Although they were experienced at designing and implementing quality improvement activities, managers reported that the guide provided them with new perspectives and ways of working.</i>

Ethics

The Regional Committees for Research Ethics in Norway determined the study was not covered under the Health Care Research Act and was thus not within their mandate. The Norwegian Centre for Research Data approved the study (NSD, ID: 54855). The project followed the principles of the Helsinki Declaration. All participants gave written informed consent.

Results

Results were categorized according to participants' views of the guide's usefulness to managers' daily quality work, user-interface, and key factors important for continuing use and sustainability.

Managers considered the guide useful in their daily quality work

The guide was perceived as overarching for the managers' quality improvement work. The managers liked the structure of the guide, saying it was useful and neat, and helped them to work systematically with improvement work. Although they were experienced at designing and implementing quality improvement activities, managers reported that the guide provided them with new perspectives and ways of working. It was viewed as providing concrete and tangible advice which was beneficial for the managers. When the action points were integrated into a system with dates and deadlines, the managers found it easier to follow up with reminders and monitor whether the work was completed. Thus, the guide helped them track progress.

The guide starts with a self-diagnosis of the organization according to the seven quality challenges. Many mentioned the benefit of visualization in a diagram of the seven challenges, although some found it a bit difficult in the beginning to rate themselves and decide on goals and action plans. However, it was easier as they became more familiar with the guide. They appreciated the combination of the guide's predefined goals and offering the opportunity to define their own, depending on their specific challenges and needs. The predefined quality challenges and goals helped them focus and presented ideas to support their quality improvement work. Some managers found prioritizing challenges difficult, as all seemed important. Some also wished there were more options to define their own goals. The majority however thought there were a suitable number of options in the guide, as too many would result in losing focus, and too few would make it difficult to fit the guide to their specific needs and context. Some chose to work with one challenge at a time, while others selected 2–3 to focus on. There was agreement among the managers that it was better to pick a small number at a time to keep focused and ensure it was feasible to implement the action plans. The content of the guide and the structure with inclusion of all necessary steps helped them adopt a comprehensive approach to improvement work. Managers reported that previously they often just implemented activities with no evaluation or further improvement work. With the SAFE-LEAD guide however, they made plans for evaluation and continuing work with challenges, goals and action plans. One of the managers in a homecare service expressed this as follows:

I find the structure of the guide very good and concrete. You know, working with goals and action plans, accountability and evaluation. Thus, what changes do we expect, and being able to sign out and then put up new goals or action plans. Thus, it is a very systematic way of working with quality improvement. (Stage 1, M5, homecare)

The managers experienced the way of working with the guide as very relevant to the quality improvement work in their organizations. They were familiar with the process of working through different steps, and some used the guide as a tool to systematize and bring together plans they already worked with in an overall strategy for the units' quality improvement work. It helped them obtain a more strategic view of their organization, where they wished to be, and how to get there. The guide embraced all areas that the managers considered important for quality and safety in nursing homes and homecare services, and the quality challenges

fitted with what they experienced at their workplace. It covered national regulations and guidelines expected from them, and gave them a practical working tool when responding to such external demands. For example, a regulation on management and quality improvement in the healthcare sector was recently launched in Norway, and some managers stated that they were in front of this by using the SAFE-LEAD guide. The guide was also suitable when aligning other national strategy plans, since they often found these fitted well with the seven quality challenges in the guide. The managers were comfortable knowing that they were addressing external demands and expectations when working on the guide. Some of the managers also included employees in the work processes, and then simplified it to save time and making it more comprehensible for them. This helped them engage staff in the quality improvement work. Several of the units had implemented concrete interventions as a result of working with the guide and found it time-saving not having to “reinvent the wheel”.

The guide covers what we work on and the action plans we are expected to deliver, especially related to quality and management (Stage 2, M5, homecare).

There was a high degree of consensus among the managers concerning the usefulness of working with the guide together in management groups, encouraging joint reflections and increased awareness of quality challenges. It was a good way to arrive at common understandings. Discussing and reflecting in groups made them more proactive and likely to find good solutions that all could agree upon.

They learned a lot, and became aware of where the shoe pinches and bottlenecks, i.e., their challenges, where they did well and where they could or should do better. Several of the managers said that working with the guide raised awareness and validation on how they actually worked. This was especially evident in the units that participated in the intervention for a year (Stage 2), where the managers expressed that the guide became more useful the more they worked with and became familiar with it. Becoming aware of what they did well kept them engaged and motivated them to do even better. This was very welcomed as they reported that they were usually not very good at talking about all the good work they do.

Working together across departments was perceived as beneficial as well as fun. In the nursing homes, for example, managers found that there were many more commonalities between different departments (e.g. long-term, acute, short-term) than they had previously been aware of, and that they could all benefit by working together. They used each other's expertise and knowledge and found it easier to exchange knowledge across departments when working together while using the guide. It became a bridge between the departments, as they helped each other to keep track towards common goals. Many included the professional development nurses in working on the guide and used elements of the guide in meetings with employees, elected representatives, and meetings with professionals other than managers. Often, they first rated themselves and then came together to discuss how and why they rated as they did in a democratic process to agree on shared goals. Several of the managers said that the tool could contribute to easing their daily work, including following up on projects and plans, when used regularly and in shared reflections.

It's very useful going through all the steps. I think that has raised awareness. A new orientation. Because we've made it even more clear now that it's pretty helpful to do these things beforehand, before setting up an action plan, and making plans. That we have had the discussions on where we want to go. (Stage 1, M3, nursing home).

Experiences regarding the user-interface of the web-version

The majority of participants preferred using the web-version of the SAFE-LEAD guide, despite issues identified with its user-interface. Managers said it was handy to have the paper version as a backup due to experiences of network restrictions and lack of computers at some of the units. Several said that although the paper version did not have a lot of text on each page, the number of pages (no. 65) made them feel a bit overwhelmed. Others found the paper version useful to browse when also working in the web-version, as they perceived the latter as lacking an overview. They thought it was difficult to find their way around in the web-tool, with a lot of scrolling to get through the different steps, causing them to lose track of the overall picture. Especially at the end, after working through the different steps and creating specific actions plans, they did not get an overall picture of what they had filled in at the different steps of the guide. In addition, the participants argued that the spaces to fill in text about, e.g. actions and responsibilities should be larger. Some solved this by copying and pasting the whole process into a Word-document. All participants expressed the need to revise the web-tool to give a better overview.

All participants also struggled with technical challenges when using the web-tool, especially in the beginning. One manager said that the web-tool often disturbed them during meetings, as fiddling with IT-problems got in the way of the work they were supposed to do. The issues most often raised were those of storing and sharing data. Both a written user manual and a short movie showing how the technical features of the tool work, including storage and sharing, were available to participants. When the researches helped and showed them during workshops it always worked, but these features were not sufficiently intuitive for the managers. Since participants did not understand the concept of how to store the data and later re-open it on a different computer, they always ended up working on the same computer. As a result of this, only one person in the group (either one of the managers or a professional development nurse) often was responsible for entering and storing data and thus got familiar with it. This could be a challenge however, since the competence of the web-tool would be missing if this person were off work.

The participants asked for a simpler version that would make it easier for them to use it in their daily work. They also suggested add-ons, such as including the possibility for the management team to rate themselves on the challenges and goals simultaneously and have the scores summarized in a diagram on the screen. This could also be used to involve employees, inviting them to participate in the rating of their unit. Furthermore, they recommended including links to relevant websites, such as governmental reports, guidelines, programs, and interventions related to quality and safety.

I have faith in systematizing the work and having meetings and such, but I still personally think that the web-tool is not the best, but having the systematization in relation to the meetings has been great. It is about the content of the meetings. However, I think we could have done this in a simpler way and still arrived at where we are now (Stage 2, M3, nursing home 3).

Managers suggested several key factors for continuing use of the guide and sustainability

One of the challenges with working on the guide was to set aside time in a busy schedule. Furthermore, reorganizations in the municipalities and units made it more difficult to maintain continuity with the work. For example, a manager in one of the units left in the middle of the guide implementation process. This manager had the main responsibility and overview of the work, and thus the remaining managers struggled to get ahead after-

wards. This was also stated in the units who were part of merging municipalities since they could end up in different management teams when the merger was completed. Therefore, it was essential that several management team members were familiar with guide to sustain its use in new teams and to make them more resilient during periods of change and reorganization. However, the managers agreed that the guide would be a useful tool during changes and reorganizations, as long as it is introduced and known before such processes start.

Carefully choosing when to introduce the guide was considered a key factor for success. The managers thought that introducing the guide should be done in the fall rather than spring, to avoid losing momentum over the long summer break. Other changes such as sick leave, maternity leaves and turnover also represented challenges for the implementation process. It was considered essential prioritizing to use the guide regularly to benefit from it. To make it sustainable they planned to include the guide in their overall strategy plans and as a permanent part of all management meetings.

You choose to prioritize. After all, it is busy, there are many other things you could think of, but we choose to prioritize working on this, and not least that we have agreed having these meetings regularly (...) It takes an effort to make this happen. (Stage 2, M2, homecare 2)

All managers stated that having a 'super user' at the unit or someone external to drive the process was essential to get started and to sustain the work progress. Many of them believed they would have difficulties working systematically with the guide without researcher involvement. They needed someone who knew the guide, facilitated, pushed, set requirements and deadlines, and kept continuity, especially in the beginning to get started. Regular workshops with the researchers helped them set aside time and stay focused despite having busy schedules. They needed guidance in understanding the guide, especially the web-tool. Some of them involved a professional development nurse or other resource persons who learned the web-tool, and had responsibility for entering and storing data. The managers could then focus on the work processes rather than spending time on technical matters with the web-tool. Thus, the super user drove the process, especially in the beginning, in close collaboration with the managers, and they recommended assigning a resource person as soon as possible. When working together in groups over time, the managers learned the structure of the guide and the technical parts of the web-tool. Eventually they managed to steer the process themselves, as they experienced good results from working this way. After using the guide for a while, several of the managers in Stage 2 of the intervention said that they would now be able to involve others who were not familiar with the web-tool and guide in the process. One of the managers in a long-term nursing home department said the following when asked what it should take for them to continue using the guide after the project period:

Then I think there must be someone who pulls it a bit, it has to be like a locomotive. I envision that [referring to a person in the room] for example. As a nurse and assistant unit manager, she must take responsibility for gathering us, that we have some meetings (Stage 1, M4, nursing home 4).

Anchoring and embedding the guide in managers' daily work was considered important for the level of engagement, motivation and actual use of the guide. Some of them said there was a lack of ownership during the first period, and recommended better anchoring of the project from the start for later implementation. To achieve this, it was very important

being part of, and having ownership of the process right from the start. The guide had to be anchored in the management team, meaning that there had to be a consensus about the relevance and importance of using the guide in the quality improvement work. There had to be a willingness in the management team to think in new and different ways. Furthermore, many managers said that involving the employees more would make the use of the guide more sustainable. It had to be bottom-up, considering employees' input and involving them in decisions, for real and sustainable changes to occur in the units. This should be part of the local adaptation of the guide, managers said. Local adaptation to fit the guide into their everyday work life was essential for continuing use of the guide in their quality improvement work.

In order for us to use the guide, it must be anchored. We must agree that we want to focus on it in the continuation and involve our new leader. It has to be the case that we choose to work on this as a guide for us in the future. (Stage 1, M4, nursing home 4)

The managers stated that the learning tools with the videos and homework assignments were helpful to understand the practical use of the guide. The videos were enlightening regarding how the management team could collaborate when using the guide, as well as providing examples how to go about quality challenges. Furthermore, one of the videos linked the guide to a new regulation on managers' responsibilities in quality work, which raised awareness on how to conceive of the new regulation. They thought that some of these videos could be shared with the employees as well. The videos helped them to prepare for the workshops and management meetings. For example, watching the videos resulted in more continuity in their work, with continuous work in between meetings. During the intervention, the managers received one video approximately one week before each workshop connected to the theme of the workshop in question. Some of the managers pointed out that all the videos should have been available before they started working on the guide to give an overview of the entire process. Watching the videos in addition to reading through the guide provided an understanding of what it was all about, and thus made it easier to get started.

Getting homework and videos has pushed us, it has kept SAFE-LEAD warm between the meetings, so not only has it been helpful, but important. (Stage 1, M2, homecare 2)

Discussion

Our results demonstrate that managers perceived the SAFE-LEAD guide as useful in their quality work, helping them adopt a systematic approach and overview of quality improvement activities. The use of the guide facilitated collaborative reflections, raised awareness and fit in with their daily work. Most preferred using the web-tool, but stated that it would require technical adjustments to support sustained use. Prioritization, anchoring, super users, and local adjustments were key factors perceived important for continued use of the guide without researchers' involvement. Below we discuss our findings in relation to previous research, as well as strengths and limitations of the study, and implications for further research and practice.

Translating research-based findings into healthcare practice has proven to be challenging (Dixon-Woods et al., 2012; Marshall et al., 2014; Straus et al., 2013). Several co-design approaches are suggested to facilitate successful translation of research into practice, such as action research (Straus et al., 2013), insider academic research (Brannick & Coghlan, 2007), and Researcher-in Residence approach (Marshall et al., 2014). Common to these

approaches is the goal of collective reflection and collaboration between practitioners and researchers on solving practical problems (Marshall et al., 2014). For example, Marshall et al. (2014) argue that a Researcher-in-Residence approach will help researchers understand the significance of local context when interpreting findings, and enable better assessment of whether and how interventions work and what should be done to increase their effectiveness. Our study supports the recommendations of close collaboration between managers and researchers in implementation of the SAFE-LEAD guide. Researcher involvement and collaborative reflections, as well as involvement of employees and super users were stated as important for managers using the guide to set specific quality improvement goals and for successful implementation of the intervention. However, sustainability of interventions beyond the project period is often a challenge in implementation research and efforts must be made to secure sustainability (Dixon-Woods et al., 2012). For example, our results demonstrated the importance of having a super user in the management team, such as a development nurse, who knew how the guide worked and had an overview of work processes. This however presents a vulnerability in the approach as knowledge of the guide and an overview of the work would be missing if this person should quit or be off work. Our study suggests that it is necessary to adapt the user interface and availability of the SAFE-LEAD guide to increase the likelihood that the managers will manage the tool without being totally dependent on a super user, and to continue using it over time without researcher involvement. In line with previous studies (Gjestsen et al., 2017; Kaplan et al., 2012), our study highlights the importance of external motivation (the intervention aligned with national priorities), local anchoring (involving relevant stakeholders early on and adapting the guide to the local context), organizational maturity (technological, timing and workforce continuity), and motivation for change (recognizing potential benefits of the intervention).

Some units were readier to adopt the guide than others, depending on the managers' expectations from the very beginning, perceived advantages, and perceptions of its compatibility with existing routines and goals of the unit. These findings are in accordance with previous studies (Carlfjord et al., 2010; Dixon-Woods et al., 2012; Granja et al., 2018). Also in line with Carlfjord et al. (2010) are some of the challenges managers faced which hindered using the guide effectively in their quality improvement work, such as staff shortages due to sick leave, turnover, holiday seasons, and organizational changes including merging of municipalities and changes in leadership. Our findings indicate that introduction of interventions and new tools in organizations should be adapted to periods with less work pressure and not close to holiday periods. Thus, such factors should be taken into account in future implementations of the guide, with anchoring of the intervention at an early stage and a specific plan on how to best use the guide during change processes.

Although all managers agreed that the web-version required technical adjustments to ease its use, there were differences in technological skills and maturity across units and municipalities, indicating that some of the challenges were due to digital shortcomings in selected units. Several studies show that technological challenges and immaturity are common in the health care sector (Bates, 2015; Falconer et al., 2018; Gjestsen et al., 2017; Johannessen et al., 2020; Ree et al., 2019), making it especially important to adapt new technological interventions to the settings in which they are being implemented. Managers in our study emphasized that adjusting the SAFE-LEAD guide to their local context and work routines was important for successful implementation and sustainability. Furthermore, the learning tools supporting managers' use of the guide was considered important for supporting work between workshops when researchers were not present. Learning videos visualizing how the SAFE-LEAD guide is structured, how the web-tool works, and providing real-life examples

on how to use it, will probably play a vital role for sustainability of the intervention without researcher involvement. Based on input from the managers in this study we will improve the web-version of the SAFE-LEAD guide, including technological and visual aspects. The guide will be freely available for the managers to use when the project is completed, and thus represent a low-cost intervention. Furthermore, the managers suggested including links to relevant websites, such as governmental reports, guidelines, programs, and interventions related to quality and safety. This was included in the original QUASER guide, but the user panel of managers in our project suggested it be removed because the guide was too long. However, in a web-version, page numbers will not be an issue, and the links will therefore be considered included in further development of the web-tool.

Strengths and limitations

The data provided thick and rich descriptions from participants, increasing the information power of the study (Malterud et al., 2016). The diversity in size, location, organization and type of services (homecare and nursing homes) of included units in which the participants worked increase the transferability of the findings as well as bringing a range of nuances and perspectives to the data.

The study researchers' involvement in the SAFE-LEAD project might pose a risk of bias in the data collection and analysis process by confirming researchers' preconceptions and highlighting positive and favorable aspects of the intervention (Smith & Noble, 2014). Several strategies were however conducted to ensure credibility of the study findings (Noble & Smith, 2015). Co-researchers with extensive experience from the practice fields both as health care workers and managers were involved at all stages of the project. The systematic descriptive analysis process and the data triangulation with interviews and workshop observations further strengthen the validity of the study findings.

Implications and conclusion

Studies of managers' experiences using web-based tools in quality improvement are key because these digital interventions have the potential for wide-ranging dissemination to leaders across the entire primary care context. This healthcare setting is in urgent need of easy access to tools, competence, and support for quality and safety work. Our results are valuable in informing future interventions and their implementation in similar contexts in Norway and internationally. Factors that managers considered as key for successful implementation were adapting the SAFE-LEAD guide to the local context, access to supporting learning tools, thorough anchoring of the intervention, acknowledging the benefits of using it, and prioritizing. These factors were also considered important for sustainability, in addition to the suggested technical adjustments of the guide to ease its use. Further studies should also take technological maturity in the sector and units into account before and during the implementation, as well as ongoing changes and reorganizations. Careful planning and timing of the intervention, involving all relevant stakeholders at an early stage, are important. In our next research step, we plan to optimize the SAFE-LEAD web-tool and test its effect on quality and safety outcomes in a cluster randomized controlled trial in Norwegian nursing homes and homecare services, and in international collaborative studies.

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Medforfatter Siri Wiig er en av gjesteredaktørene for dette temanummeret. Derfor har den redaksjonelle behandlingen og beslutningen om publisering av artikkelen blitt håndtert av de andre gjesteredaktørene i samarbeid med ansvarlig redaktør, og Siri Wiig har ikke hatt innsikt i vurderingsprosessen.

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