

Implementation of a complex health services intervention in long-term care homes: a process evaluation using focus groups

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Abstract

Background

With rising numbers of the elderly living in nursing homes in Germany, the need for on-site primary care is on the increase. A lack of primary care in nursing homes can lead to unnecessary hospitalization, higher mortality, and morbidity in the elderly. The CoCare (“coordinated medical care”) project has therefore implemented a complex health intervention in nursing homes, using inter alia, regular medical rounds, a shared patient medical record and medication checks, aiming to improve the coordination of medical care. This study reports upon the results of the process evaluation assessing the perceived acceptance and barriers of the project by stakeholders.

Methods

Focus group interviews were held between the fall of 2018 and the fall of 2019 with nurses, general practitioners and GP’s assistants working in or consulting a participating nursing home. A semi-structured modular guideline was used to ask participants about their opinion on different aspects of CoCare. Focus groups were analyzed using qualitative content analysis.

Results

In total, N=11 focus group interviews with N=74 participants were conducted. Eleven main themes with four subthemes were identified, encompassing all aspects of CoCare. The overall acceptance of the project was good. Participants elected to speak most often about the project modules “communication and collaboration” and “medical rounds”, with participants concluding that CoCare had prevented unnecessary hospitalizations. The main barriers were understaffing and complexity of the program.

Conclusion

Implementation of CoCare in nursing homes is complex and presents some barriers. However, the overall acceptance was good and participants reported the first positive results. Furthermore, the project provides a good structure to overcome potential barriers. However, some adaptations to the implementation process should be made.

Background

Demographic transition is in full swing in Germany, with every fifth person being over 66 years old (1). About two million people in Germany are in need of long-term care (2) and approximately 700.000 people were already living in NHs in Germany in 2018 (2).

Overall, older age was shown to be associated with greater health care utilization compared to the general population (4, 5). Yet, the level of care needed was negatively associated with the probability of utilizing medical specialists, showing inequality in the health care system (6). Other reports show a lack

of primary care in NHs (7), leading to unnecessary hospitalizations for the elderly (8-10). Unnecessary hospital admissions were not only shown to be costly (9, 11), but also increased the risk of complications and mortality in NH residents (12, 13). The insufficient availability of general practitioners (GPs) and acute care were determined to be the main reasons for unnecessary hospital admissions in several studies (9, 14). However, the implementation of primary care in NHs is hindered by the lack of infrastructure or insufficient compensation of physicians.

Project CoCare (“coordinated medical care”) aims to bridge the gap by implementing a complex health care intervention to improve primary care in NHs (15). The study takes place in the federal state of Baden-Wuerttemberg, Germany, with 31 NHs implementing the new intervention, providing it to approximately 1,150 residents. Furthermore, 25 NHs providing survey data will be used as control group and additionally claims data of N=8,000 of NH residents in Baden-Wuerttemberg will be randomly drawn upon for comparison. Inter alia, the intervention provides a shared patient medical record entitled CoCare Cockpit (CCC) and standard courses of treatment, as operating procedures for nurses and GPs. Furthermore, CoCare financially compensates weekly on-site medical rounds, regular medication checks, case conferences and the extended availability of GPs. CoCare also aims at improving communication and collaboration between GPs and nurses by forming teams of physicians sharing care duties and by appointing a CoCare contact person in every NH. See Figure 1 for an overview of all modules of the project.

CoCare was implemented by kick-off events in each NH with nurses and GPs attending to inform them about content and the process of intervention. Furthermore, training regarding the use of the CCC, the standard courses of treatments and the management of suprapubic catheters were offered. As a result of CoCare, an increase in quality of care, care efficiency as well as a reduction in costs are expected. The intervention was delivered between January 2018 and September 2020 including NHs in both rural and urban areas to achieve better representativeness. Further information on the project and its study design has been published elsewhere: Brühmann et al. (15).

In accordance with the guidelines for complex interventions by Moore et al. (16), a formative process evaluation has been conducted for this project. Acquiring specific information on the implementation process is crucial for decision makers before implementing the intervention on a larger scale. A process evaluation will therefore investigate how the fidelity, dose, adaption and reach of a newly implemented complex health intervention are (17, 18). In CoCare several approaches were chosen to conduct the process evaluation, such as a) quarterly telephone interviews, b) annual audits with the nursing management to assess the fidelity and c) focus group interviews with NH residents to assess the reach of the intervention. Furthermore, focus group interviews with GPs, nurses and GP’s assistants were conducted to assess the acceptance, fidelity and dose of the intervention as well as the barriers for implementation. The team conducting this process evaluation is part of a bigger CoCare project team, with the Association of Statutory Health Physicians Baden Wuerttemberg (KVBW) providing the CoCare

infrastructure, and the Centre for Geriatric Medicine and Gerontology, Faculty of Medicine and Medical Center – University of Freiburg providing expertise in long-term care. Regular project meetings of all these participants were conducted to monitor the implementation process. At the end of the project, a summative evaluation will be conducted, based on claims data and questionnaires, addressing the quality of life of residents and satisfaction with the medical care provided.

This paper seeks to describe the results of the focus group interviews with GPs, nurses and GP's assistants as well as to give recommendations for adoption of the implementation process.

Methods

This research was funded by the Innovation Committee at the Federal Joint Committee (G-BA), Germany under grant number NVF1_2016–080. The process evaluation was conducted at the Medical Center – University of Freiburg. Ethical approval for this study was granted by the Ethics Committee of the University of Freiburg (Approval Number: 333/17). The study was registered at the German Clinical Trial Register (DRKS00012703). Results are reported complying with the Consolidated criteria for reporting qualitative research (COREQ) checklist (19).

Study Design

Focus group interviews were conducted in mixed groups with GPs, GP's assistants consulting a NH and nurses working in a NH enrolled in CoCare. Participants in each focus group were from the same NH and knew each other. Participating NHs were asked to send nurses, GPs and GP assistants engaged with CoCare. Focus groups were conducted between the fall of 2018 and the fall of 2019. Participation was voluntary and no disadvantages arose from non-participation. Participants were supplied with information on the objectives of the focus group interviews and written informed consent was obtained from all participants. The planning of the process evaluation and the interpretation of the material was solely done by the authors. As the authors used various methods for the process evaluation (15), some of the participants and researchers knew each other from previous contacts.

Focus groups were conducted using semi-structured modular guidelines, which were chosen as CoCare comprises many modules. Using a modular guideline, participants were able to pick which of the many aspects from the intervention they felt were particularly important to discuss. The interview guidelines were developed for this study by the authors based on the study design of CoCare (15). For this purpose, the CoCare modules served as main themes for the interview guidelines, asking questions about the benefits, implementation and barriers for each module (e.g. Medical Rounds: *What benefits did you experience with the CoCare-rounds?*). The development was done in an iterative process, with the project team discussing and changing the interview guidelines until all team member agreed on it.

Each interview began with a short introduction by the researcher, followed by a set of predetermined discussion topics (CoCare Modules) to choose from, based on the participants experience with the

modules. The researcher then asked open questions about the chosen topics. The interview guidelines had been previously published in Brühmann et al. (15) and can further be seen in Additional File 1.

Focus groups were conducted by CR and BB within the NHs. All of the focus groups were digitally recorded and transcribed verbatim by an external service provider. The transcripts were pseudonymized and given a consecutive ID-number from 1 to 11. As the focus groups were held in German, participants' quotes to illustrate the finding were translated into English by the authors of this manuscript.

Data Analysis

Data analysis was based on the content analysis outlined by Mayring (20) using a mix of deductive and inductive approaches. For this purpose, an initial coding system was developed based on the CoCare modules from the modular guideline to systematically assess the concept of the intervention. VK and RvdW then analyzed the first three interviews independently, using the initial coding system and taking notes as necessary. VK and RvdW adapted the coding system to the findings to account for the perceived importance of themes by participants, by for example, organizing themes as subthemes even though it is a main CoCare module, and discussing the results. This process was repeated twice before generating the final coding system. RvdW then coded the remaining focus groups using the final coding system. The results were presented to and discussed with the project team at different stages of the data analysis to ensure intersubjective comprehensibility. Data management was done using MAXQDA 2020 (21).

Researcher Characteristics

RvdW is a female researcher in the field of health services research and rehabilitation research. She holds a degree in psychology and has experience with qualitative studies. VK is a female master student in psychology and works as a student assistant in the field of health services research. Both, CR and BB are postdoctoral researchers in the field of health services research and rehabilitation research. CR is a trained psychologist, and BB holds two degrees in health sciences. EF is a full time professor in health services research and rehabilitation research. His work focuses on methods in health services research.

Results

Overview of Focus Groups and Participants

N=11 focus groups with a total of N=74 participants were conducted. Seven focus group interviews were conducted in non-profit NHs and four in private administrated NHs. The focus group sessions lasted between 20 and 59 minutes, with an average of 39 minutes. 78.8% of all participants were female. Most of the participants were nurses working within the participating NHs (n=48), followed by consulting GPs

(n=20). A full overview of the distribution of participants can be seen in Table 1. As the focus groups target on the interdisciplinary team of GPs, nurses and GP assistants as a whole, differences between professions were not analyzed.

Table 1: Overview of participants

	Male	Female	Total
General practitioners (GPs)	13	7	20
GP assistants	0	6	6
Nurses at the NHs	3	45	48
Total	16	58	74

CoCare

Participants had opinions and associations on all aspects of CoCare, thus eleven main themes (see Table 2) were ascertained: state of implementation; CoCare-Cockpit (CCC); medical rounds; medication check; communication and collaboration; medical specialists; extended availability; case conferences, quarterly and annual meetings; treatment courses; management of catheters; overall assessment. Furthermore, four subthemes were identified. An overview of all main and sub-themes including descriptions and coding rules can be found in Additional File 2.

Table 2: Main themes and sub-themes

Main themes	Sub-themes
State of implementation	Barriers for implementation
CoCare-Cockpit	Use and Benefit of the CoCare-Cockpit
	Barriers to use
Medical rounds	
Medication check	
Communication and collaboration	General practitioner teams
Medical specialists	
Extended accessibility	
Case conferences, quarterly and annual meetings	
Standard courses of treatment	
Management of catheters	
Overall assessment	

State of Implementation

As the NHs entered the project at different times, the state of implementation differed across facilities. Furthermore, some participants mentioned that not all the modules could be implemented at once, since the implementation takes some time. However, even if single components had not yet been implemented

in the NHs, the participants did emphasize that CoCare builds awareness for the health care of the elderly and specific topics, such as the medication checks. Some focus groups mentioned that some modules, such as the medical rounds, were part of their regular routine even before CoCare, so that they did not see the need to change it within the project CoCare.

Participant 1: "And there are a few things we still need to try. That's too early to discuss."

Participant 2: "So, especially the documentation, the CCC, that's something new. We still kind of tiptoe around it. It is still very new and we need to gain some experience with it during the coming weeks and months." (Focus group 4).

Barriers for Implementation

According to the participants, the biggest barrier for full implementation was the lack of available resources to devote to the intervention, such as nurses' time. The issue of understaffing due to sickness or training was repeatedly mentioned.

Furthermore, participants mentioned that there was a great deal of bureaucracy during the project, which accounted for the high workload.

„It would be possible during normal business. But then? Someone gets ill, someone is absent, someone is in training. And then suddenly nobody is here or nobody, who can....nobody has time to do these additional tasks." (Focus group 1)

CoCare-Cockpit (CCC)

Participants had varying opinions on the CCC (electronic medical records). Overall, the idea of common electronic medical records between GPs and NH was rated positively. Communication between GPs and NH had improved since the implementation of the CCC according to some participants. Improved preparation of medical rounds and reminders for medical rounds, as well as automated treatment recommendations were named as positive aspects of CCC. Additionally, participants suggested some features for future developments, such as a tracking of changes made. However, most NHs would only do basic documentation in the CCC, with the medical rounds and medication being the most documented modules of CoCare.

„You can document all hospitalizations or someone is at the hospital and you get push-up messages from the Cockpit: Please do a medical round for that resident, after he comes back from the hospital! That way, we won't forget it" (Focus group 3)

Barriers to use

The biggest barrier mentioned was, that NHs and GPs already use their own documentation system in order to comply with regulatory standards. Thus, NHs used up to three different systems including the

CCC resulting in double documentation. This double documentation could potentially lead to mistakes, especially as no software interfaces are available.

Furthermore, some participants reported that the NHs struggled with their access to the internet and new network cables had to be installed before the CCC could be used.

„And if you ask me, that would lead to mistakes, because every normal person, when they have written or typed the exact same thing for the third time, they might leave something out, no longer want to...(several other participants agree in the background)...every normal person would do that...” (Focus group 11)

Medical Rounds

According to the participants, the newly implemented weekly medical rounds attended by GPs and nurses were one of CoCare's most important modules. Even though some NHs had regular medical rounds before the project, most participants still reported positive effects. Holding rounds on the same day each week allowed for better preparation by both nurses and GPs. According to some participants, residents would feel much more comfortable as medical rounds were scheduled regularly. One participant said that the newly implemented GP's visits were already preventing unnecessary hospitalizations.

„...due to these visits, I know all the patients, know their pathology [...] and I would say, that we notice, even skin changes or if the patient has a mild fever or something similar, so we can really prevent hospitalizations.” (Focus group 7)

Medication Check

In most NHs, medication checks are conducted during medical rounds. Participants stressed the importance of the medication checks, as some residents are given a lot of medication. They valued that the project reminded them to conduct the medication checks regularly. Most participants said that the medication checks are conducted during the regular medical rounds in discussion with attending nurses. Where possible, GPs would include psychiatrists and neurologists to talk about psychotropic drugs, too.

Medication checks are especially important after a hospital discharge, as hospital doctors would not pay attention to existing medication, changing the medication plan or adding new medication.

Additionally, participants wished that the CCC would issue a warning if two or more medications had negative interaction effects.

But now, sitting down during the visits, looking at the medication plan together and talking about it with every profession. [...] Most medications are from the hospital, they stay in the plan or will be continued [...] (Focus group 9)

Communication and Collaboration

The project was seen as a team building intervention by many participants. Communication and collaboration are very important in NHs and CoCare might have led to more trust within the team. More time for communication and consultations is left due to the strict framework of the project.

For nurses, the barriers when talking to GPs were lowered, making it easier to agree on a resident's treatment. Participants said teamwork was more professional in some NHs now and decisions were being made with the whole team being involved. Participants also regarded a consistent contact person within the NHs as positive.

Moreover, the contact to the GP's assistants was perceived as better and more structured, making it easier to organize treatment and medical rounds.

Again, one participant mentioned that the improved communication within the team had already led to a prevention of unnecessary hospitalizations.

„When I come here, I have a number I can dial, I have someone who has time for me and is my contact person. Furthermore, I need to say: There is some structure. When something is not clear, there is someone I can talk to.” (Focus group 2)

General Practitioner Teams

Positively mentioned was the additional financial compensation CoCare provided to GPs for supplying medical care in NHs. That would have made it easier to recruit GPs for the project.

Furthermore, GPs appreciated the newly set up GP teams for providing consultation at a NH, as visits and treatment planning were made easier. If GPs worked in a team at a NH, they would leave a message for the GP to lead the next visits or short consultations about the treatment planning. In this way, a continuous treatment of residents could be guaranteed. However, GPs would not change the medication plan for a patient if the patient was being mainly treated by another GP. The newly built GP teams are also a relief for the nurses, as they know a GP from the team will be at the NH to provide care more often than before.

„And I do use it in a way, when I see: O.k. a colleague of mine will do a medical round, that I communicate: There is a problem. I'll be back in only a week. Can you have a look? (Focus group 3)

Medical Specialists

All participants were of the opinion that medical specialists' consultations, such as psychiatrists or urologists, are important. However, most participants said that it was not easy to find specialists for regular consultations within the NH.

“No other NH believes us when I tell them that we have a neurologist who comes to see our residents regularly. That’s not something you see very often.” (Focus group 1)

Extended Availability

The extended availability of GPs during the evening hours was received very differently among participants. Whilst being accessible even in the evening was natural for some GPs, others refused to do it due to the high workload.

In some NHs with extended GP hours, GPs and nurses had agreed to call the GP first in case of need. Together with the nurses, they would then decide what to do next. Again, one of the participants indicated that this new course of action had already helped prevent hospitalizations.

However, all the participants agreed that, in order to ensure extended accessibility, more GPs would be needed to distribute the workload better.

“There is always someone to approach and we agreed that we would be called before an ambulance is requested. We then come around and have a look, if that is really necessary.” (Focus group 1)

Case Conferences, Quarterly and Annual Meetings

Case conferences as well as quarterly and annual meetings had not yet been implemented in most NHs. Most participants struggled to distinguish between the three kinds of meetings. One participant mentioned that they had been conducting quarterly talks within the framework of the regular medical rounds.

„So the medical rounds usually take a long time and the quarterly talk is supposed to be 90 minutes I think. I think we do that several times per quarter during the medical rounds, right?” (Focus group 4)

Standard Courses of Treatment

When asked about the standard courses of treatment, opinions differed between the participants. For some participants, the standard courses of treatment were too detailed to learn and follow. Moreover, some participants did not know that the pathways were available as a hard copy outside the CCC.

Other participants thought the standard courses of treatment were helpful, noticing that it made GPs mindful of previously overlooked issues. Especially the treatment pathway for the transition from curative to palliative care was mentioned as being particularly helpful. One participant reported that the standard courses of treatment were used as a template for further developments of other pathways, such as a procedure for urinary tract infections. Participants also appreciated the training given before the implementation of the standard courses of treatment.

“I thought the training was interesting, there were examples and categories: the agitated patient, the aggressive patient. That is extremely helpful, because it actually is a simple pattern, giving you a structure for problem solving.” (Focus group 10)

Management of Suprapubic Catheters

The affiliated GP’s had to specifically order a sonography device if they wished to perform the management of suprapubic catheters; some participants mentioned that the delivery took too long. Furthermore, participants criticized that the sonography device can only be used on patients, who consented to take part in CoCare and not for other procedures.

„In CoCare they only play a role for these catheters...[...]. Apart from that we don’t use it really. However, we could use it for other procedures.” (Focus group 9)

Overall Assessment

The overall assessment differed among participants. Some participants regarded the project as “genius”, improving the care of residents in NHs. Due to the additional financial compensation, the GPs said they were in a good position to implement CoCare’s most important modules. Special focus was put on the preventative aspect of CoCare, making it easier to treat residents’ illnesses early. However, some participants stated that most aspects of CoCare were already the standard care in their respective NH. Some participants feared that if CoCare was implemented in standard care, it would pose a bureaucratic hurdle.

“Of course, we want CoCare to be positively evaluated, because the system itself is genius and it would be a pity if it were not to be part of the standard care in future.” (Focus group 7)

Discussion

Results from the focus groups show that the project implementation is complex, and some modules were easier to implement or more important to some participants than to others. Some participants already mentioned that the medical round and medication checks prevented unnecessary hospitalizations and helped to ensure that residents had to take less medication.

Even though the overall acceptance of the project was found to be good, the participants reported some barriers for implementation. For instance, participants mentioned that the project was complex, too detailed and bureaucratic. Thus, fidelity was not good for e.g., the case conferences, quarterly and annual meetings, which could not be distinguished by some participants and were therefore not implemented completely in some NHs. Furthermore, the management of the suprapubic catheters was not performed in most NHs, as NHs had to wait a long time for the sonography device. In a scoping review, the intervention complexity was a common barrier for the implementation of integrated care (22), with rising

complexity making it more difficult to implement the intervention (23). On the other hand, fidelity was found to be good for the regular medical rounds and medication checks, with participants emphasizing the importance of these CoCare modules.

Furthermore, some participants were concerned about integration in routine care, especially as understaffing was seen as the biggest barrier for implementation and participants mentioned they could not comply with the intervention at all times. Understaffing and high workload were also reasons why the CCC was not used properly, as it was perceived as complicated and double documentation was necessary to comply with regularly standards. Previous reports found that NH staff would have to work overtime to compensate for understaffing and bureaucracy (23). Even though participants in this study did not mention overtime the issue of understaffing and overtime is well-known in Germany with an average of 42 hours of overtime per nurse within six months (24). Another intervention element not implemented entirely was the extended availability, with some GPs refusing to do it due to high workload. Again, this barrier could be overcome with more GPs being in charge of one NH.

All the barriers reported by the participants are well-known (22) and implementation of complex health intervention remains a challenge (25). Implementation of health services interventions, particularly complex ones, requires organizational and individual change processes (23). Completing these processes takes at least one year, or most likely longer (26). With an implementation period of 33 months, CoCare provides a good time frame for full implementation and normalization. Furthermore, the project financially compensates for the higher workload for NHs and GPs and some barriers, such as the double documentation, will recede after implementation into regular care.

Some adjustments should be made in order to implement CoCare more thoroughly. For instance, even though kick-off events and trainings for several modules were offered some participants did not know that the standard courses of treatment were available in a hard copy. Thus, a regular repetition of training, especially for new staff might be helpful to raise fidelity and dose of the intervention. Furthermore, most NHs struggled to find medical specialists providing special medical care to residents. This problem is well known (e.g. Schäufele et al. (27)), with for example only 17% of NH residents having contact to an ophthalmologist within the time frame of a year in a previous study (28). Legal options to improve medical care by specialists such as collaboration agreements between medical specialists and the association of statutory health insurance physicians (*Kassenärztliche Vereinigung*) seem not to have any effect (28).

As expected, interprofessional communication and collaboration improved significantly and were perceived as one of the most important modules in CoCare according to the participants, with CoCare being seen as a team building intervention.

Pertinent German organizations recommend using tools like regularly scheduled medical rounds or extended availability to help improve interprofessional communication. Furthermore, nurses play a crucial role as they are the ones organizing interprofessional medical care in long-term care homes (29). CoCare combines all these tools, providing a solid framework to facilitate interprofessional communication.

Participants in our study valued the newly built teams of GPs and the contact persons within NHs. The implementation of a fixed contact person was not seen as useful in a previous qualitative study assessing interprofessional collaboration in nursing homes in Germany (30). However, it was noted that the lack of perceived usefulness was due to NHs already having a fixed contact person for GPs before the intervention (30). Thus, it can be hypothesized that a fixed contact person is perceived as useful when newly implemented in a NH.

Overall, interprofessional collaboration and communication were found to have an impact on health outcomes (31, 32). For the elderly, interprofessional collaboration has positive effects e.g. on quality of life, mortality, or length of stay in hospitals (33). Furthermore, there is some evidence that interprofessional collaboration is cost saving (34). Some participants in this study had already concluded that the improved collaboration and communication prevented unnecessary hospital admissions and therefore had an impact on health outcomes for residents.

Strength And Limitations

With N=11 focus group interviews and a total of N=74 participants, this qualitative study comprises a relatively big sample size. Furthermore, this study adheres to recommendations for the guidelines for the process evaluation of complex interventions (16).

Nonetheless, this design displays some limitations. First of all, results were not distinguished between professionals. However, doctors are known to evaluate collaboration and communication better than nurses within NHs (35-37). As the aim of this study was to analyze the overall acceptance and implementation, we decided not to distinguish between professions.

Furthermore, as a modular interview guideline was used, not every focus group talked about every topic in detail. However, most focus groups chose to talk about the CCC, medical rounds, and interprofessional communication. This shows that these CoCare modules are of high importance and acceptance. Yet, especially for the CCC many implementation barriers were perceived and expressed. Regarding data saturation, we would argue that with the abundance of material in the themes mentioned above, we reached data saturation. Yet, some modules, such as the “management of suprapubic catheters” were less talked about. We found, that the fidelity was low in these modules and thus data saturation might not be reached. Yet, we decided not to conduct further focus groups as the information gain might be limited and further elements of process evaluation are conducted to assess all aspects of CoCare.

Conclusion

The results shown in this study are promising, with participants reporting a positive impact on health outcomes and a good acceptance of the intervention, due to high fidelity for medical rounds and medication checks. Particularly, collaboration and communication seem to have improved in the participating NHs. However, this study is only part of the process evaluation and thus a final conclusion

of the implementation process cannot be drawn. Furthermore, the final evaluation of the intervention is still due. The quantitative, summative evaluation will be primarily based on claims data and questionnaires and will focus on the number of hospitalizations, as well as the residents' quality of life and health care costs. Based on the results reported in this process evaluation, positive results of the summative evaluation are expected.

List Of Abbreviations

NH = Nursing Home

GP = General practitioner

CoCare = Coordinate Medical Care

CCC = CoCare Cockpit (electronic medical record)

Declarations

Ethical approval and consent to participate

Ethics Approval of this study was granted by the ethics committee at the Chamber of Physicians of the State of Baden-Württemberg (Reference number: B-F-2017-127; 14.11.2017) as well as by the ethics committee at the University of Freiburg Medical Centre (Reference number: 333/17; 03.08.2017). Written informed consent of each participant was obtained.

Consent for publication

Not applicable

Availability of data and materials

The datasets analyzed during the current study are not publicly available due to data protection regulations.

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Competing interest

The authors declare that they have no competing interests

Consent for publication

All authors have approved the final version of the manuscript.

Authors' contributions

Data collection was performed by CR and BB. Data preparation and analysis were performed by RvdW and VK. EF conceptualized the study and supervised all steps. The first draft of the manuscript was written by RvdW and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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Figures

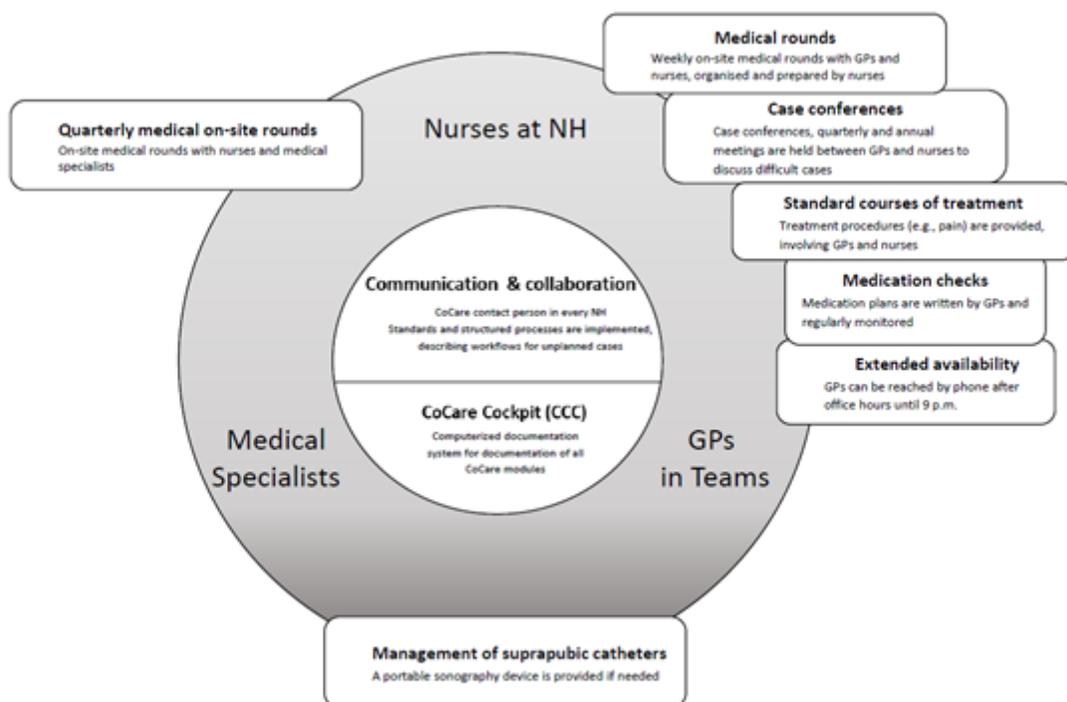


Figure 1

Overview of all modules of the CoCare intervention and their interaction; GP = General practitioner

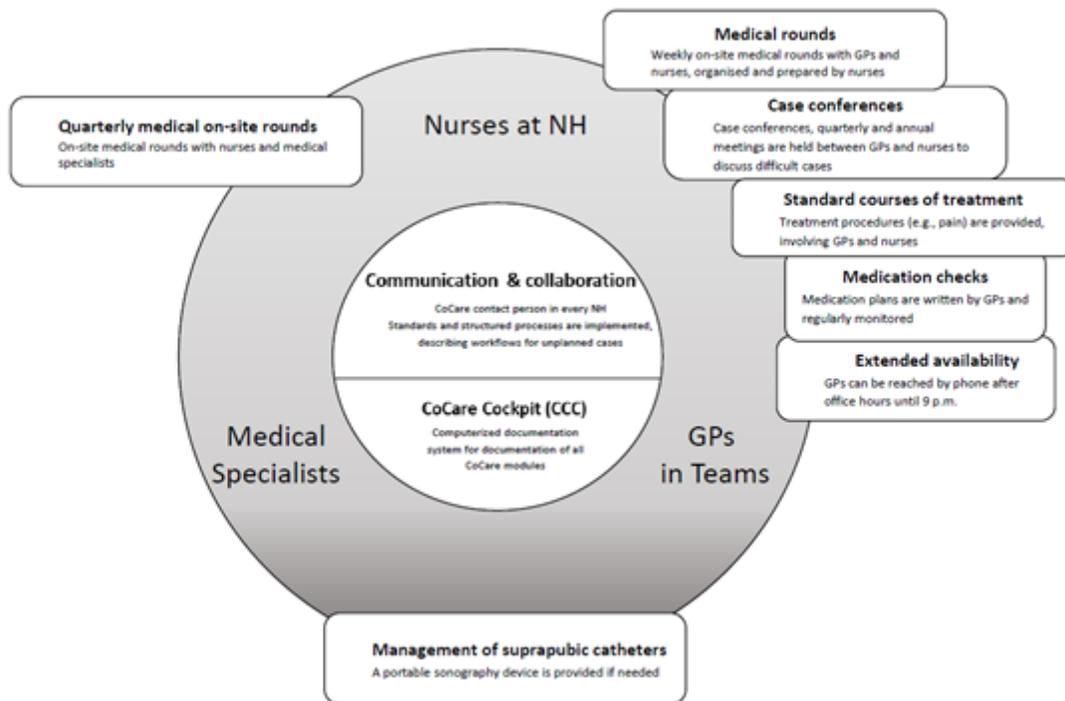


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Overview of all modules of the CoCare intervention and their interaction; GP = General practitioner

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