Geriatricians' perception about their role in multidisciplinary hearth failure care. A qualitative study.

De perceptie van geriaters over hun rol in de multidisciplinaire hartfalen zorg. Een kwalitatieve studie

Bram Nys, KU Leuven

Promotor: Prof. Bert Vaes, KU Leuven

Co-promotoren: Miek Smeets, KU Leuven; Willem Raat, KU Leuven

Master of Family Medicine

Masterproef Huisartsgeneeskunde
Academiejaar: 2022 – 2023

Deze masterproef is een examendocument dat niet werd gecorrigeerd voor eventueel vastgestelde fouten. Zonder voorafgaande schriftelijke toestemming van zowel de promotor(en) als de auteur(s) is overnemen, kopiëren, gebruiken of realiseren van deze uitgave of gedeelten ervan verboden. Voor aanvragen tot of informatie i.v.m. het overnemen en/of gebruik en/of realisatie van gedeelten uit deze publicatie, wendt u tot de universiteit waaraan de auteur is ingeschreven.

Voorafgaande schriftelijke toestemming van de promotor(en) is eveneens vereist voor het aanwenden van de in dit afstudeerwerk beschreven (originele) methoden, producten, schakelingen en programma's voor industrieel of commercieel nut en voor de inzending van deze publicatie ter deelname aan wetenschappelijke prijzen of wedstrijden.

Abstract (Nederlandse versie)

Achtergrond: De rol van huisartsen en cardiologen in de multidisciplinaire hartfalen (HF) zorgteam is reeds bestudeerd. Ondanks de hoge prevalentie van HF bij ouderen, werden geriaters vaak over het hoofd gezien. Deze studie trachtte de perceptie van geriaters over hun rol in de multidisciplinaire HF-zorg te onderzoeken.

Methodes: Deze studie is een kwalitatieve semigestructureerde interviewstudie met geriaters, werkzaam in Vlaanderen, België. Een doelbewuste steekproef werd uitgevoerd en interviews werden afgenomen tot de data verzadigd was. De QUAGOL-methode werd gebruikt voor data analyse.

Resultaten: Dertien geriaters werden geïnterviewed. Ze meldden vertrouwen te hebben in hun HF beleid en zien zichzelf als de beschermheer van de patiënt tijdens hospitalisatie. In de zorgorganisatie tijdens de hospitalisatie werden opvallende verschillen gezien in hoe de triage op spoedgevallen georganiseerd werd. De geriaters waren tevreden over de samenwerking met de cardiologen en waardeerden hun rol, al rapporteerden ze een verschil in visie over het beleid van geriatrische HF patiënten. De opvolging en transmurale zorg na hospitalisatie werd aangegeven als een belangrijk onderdeel om heropname te voorkomen, desondanks zagen de meeste geriaters dit niet als hun verantwoordelijkheid en gaven ze deze opvolging door aan de huisarts en de cardioloog. Sommigen namen deze opvolging zelf op vanwege de hoge cijfers van heropnames, wat in diverse structuren georganiseerd werd en verscheidende geriaters pleitte voor een verbetering van structuur en organisatie van de multidisciplinaire HF zorg. De vroegtijdige zorgplanning werd vermeld als een belangrijk onderdeel van de geriatrie, waarin er meer verwachting was van zowel de cardioloog als de huisarts om hieraan te participeren.

Conclusies: Geriaters hadden vertrouwen in hun beleid van geriatrische HF patiënten. Ze waren tevreden over de samenwerking met de cardiologen, maar pleitten voor een meer gestructureerde aanpak van de opvolging na hospitalisatie. Ze verwachtten meer betrokkenheid van zowel de cardioloog als de huisarts in de vroegtijdige zorgplanning.

Abstract (English version)

Background: Several studies have examined the role of general practitioners (GP) and cardiologists in the multidisciplinary heart failure (HF) team. Geriatricians are often overlooked, despite the high prevalence of HF in the elderly. Therefore, we investigated how geriatricians perceive their role in multidisciplinary HF care.

Methods: This study is a qualitative semi-structured interview study with geriatricians, working in Flanders, Belgium. Purposive sampling was performed, and interviews were conducted until data saturation was reached. The QUAGOL method was used for data analysis.

Results: Thirteen geriatricians were interviewed. They reported to feel confident about HF management and see themselves as the guardians of the patient during hospitalization. Regarding care organization during the hospitalization phase, striking differences were reported in triage at the emergency room. Geriatricians were satisfied with the collaboration with the cardiologists and valued their role, although they reported differences in vision about dealing with geriatric HF patients. Regarding transmural care organization, follow-up after hospitalization was valued highly to prevent rehospitalization but most geriatricians did not see this as their responsibility. They mostly passed on the follow-up to the GP and the cardiologist. Some did take this follow-up into their own hands in various forms because of the high rehospitalization rate and many suggested ways to improve the organization of multidisciplinary HF care. Advance care planning was seen as an important aspect of geriatrics, yet they expected more collaboration from both the cardiologist and the GP in this matter.

Conclusions: Geriatricians felt confident about the management of geriatric HF patients. They were satisfied with the collaboration with the cardiologists but advocated a more structured approach to follow-up patients after hospitalization. They expected more engagement from both the cardiologist and the GP in the timely discussion of advanced care planning.

Introduction

The prevalence of heart failure (HF) is especially high in older age groups (1, 2). Elderly patients with heart failure differ from younger patients in terms of long-term outcomes and prognostic factors (3). Since 90% of elderly with heart failure have a comorbidity and 50% have at least 5 additional conditions, treatment options should be considered individually, taking their frailty, comorbidities, polypharmacy, and the patient's own predetermined goals into account (4, 5, 6). HF is one of the most frequent causes for hospitalization of elderly patients (7). Therefore, optimal management of heart failure in the elderly is a priority in health care (8).

The goal of heart failure management is to achieve a care continuum across different health care settings, as shown by multidisciplinary care programs (9). As a minimum requirement, the NICE guideline recommends a geriatrician forms part of every HF multidisciplinary team (10). Carrying out a comprehensive geriatric assessment in patients hospitalized for an acute disease is associated with a greater probability of survival, return home at discharge and a reduction in costs (11). Although the role of the geriatrician in HF care is not commonly described in literature, a randomized controlled trial comparing a multidisciplinary intervention by a geriatrician and a cardiologist after a heart failure hospitalization in older patients showed this was superior to cardiologist's follow-up alone in reducing all-cause rehospitalization (12). Levy et al. firmly stated that integrating geriatricians into HF services can be achieved and is a win-win for all, benefiting patients, carers, and health care providers (13). Additionally, since geriatricians foster close links with primary care, they are well placed to support transitions of care, facilitate communication, and work collaboratively to avoid hospital admission (13). However, while several studies have examined the role of the general practitioner and the cardiologist in this multidisciplinary collaboration, geriatricians are often overlooked (14, 15, 16).

Therefore, we want to study how geriatricians perceive their role in current and future multidisciplinary HF care through semi-structured interviews.

Methods

Study design

We used a qualitative design to study geriatricians' perceptions about their role in the current and future care of patients with heart failure. We took a phenomenological approach (17) and conducted face-to-face semi-structured interviews. The consolidated criteria for reporting qualitative research (COREQ) checklist were used as a guide to report our study (18) (Additional file 1).

Ethical considerations

We received approval from the Research Ethics Committee of the UZ/KU Leuven (MP018425) on the 7th of December 2021. All participating geriatricians gave their written informed consent prior to participation.

Setting

In Belgium, geriatricians work together with a multidisciplinary geriatric team. By law an internal geriatric liaison must be present for the follow-up of geriatric patients on other departments of the hospital and an external liaison is recommended for the follow-up of patients after hospitalization in their home setting. A geriatric day hospital is generally present for the ambulatory work-up of geriatric patients. A financial difference can be seen between the university hospitals, where the doctors work as employees, and the secondary hospitals, where it depends on the agreements made between the doctors and the hospital about how the earnings are divided.

Participants and recruitment

We contacted geriatricians, working in the region of Flanders, Belgium, by phone and e-mail, to ask to participate to the study. Recruitment was voluntary and we offered no remuneration. We conducted purposive sampling and aimed for variation in gender, years of experience, type of hospital (secondary, tertiary) and regional setting.

Data collection

After a literature review and discussion in the research team, a topic guide was created (Additional file 2). This was set up in Dutch, a translated version can be found in the Appendix. One

of the authors (BN) conducted the face-to-face semi-structured interviews between January 2022 and July 2022. This researcher is a male, master GP student at the University of Leuven (KU Leuven) and worked as a GP trainee in Flanders, Belgium at the time of the interviews. This study is his master's thesis of his education. He was familiar with some of the interviewees within a professional context and participants were informed about BNs occupation and personal goal of the study. MS trained the author in conducting interviews, and after two interviews the topic guide was evaluated and adapted to aim for maximal quality. Due to the Covid-pandemic, the interviews took place online through a video call, which was audio- and video-recorded. The interviews were transcribed verbatim, including verbal and non-verbal signs. The interviews were conducted in Dutch, the native language of the interviewers and geriatricians, and participants decided a time convenient to them. We conducted interviews until we reached data saturation. We defined data saturation as the moment when the two latest interviews no longer contributed any new elements and when a certain theme had been exhaustively described in all its dimensions and variations. This signified that additional interviews would no longer provide new insights.

Data analysis

The interviews were conducted in cycles of three to four interviews and were then analyzed. After thirteen interviews data saturation was reached. The principles of the Qualitative Analysis Guide of Leuven (QUAGOL) were followed to guide data analysis (19). QUAGOL is a theory and practice-based method that supports and facilitates the analysis of qualitative interview data. The process of analysis consisted of two steps: 1) a thorough preparation of the coding process and 2) the actual coding process, facilitated by NVIVO 12 software (QSR International, Melbourne, Australia). Each part consisted of five phases that were processed dynamically. During the preparatory phase, the aim was to become as familiar as possible with the interview data to compile a list of concepts as a starting point for the actual coding process in NVIVO 12. In the first phase two authors (MS and BN) each made a one-page narrative report and conceptual interview schemes of each transcript separately.

Afterwards, they analysed and compared the conceptual scheme of the various interviews to compile a joint list of concepts, through a constant comparison process. The data analysis started as

soon as the first interview was performed and as the interviews progressed, emerging themes were noted and used to optimize the scheme of the topic guide for subsequent interviews. The second phase consisted of the actual coding process. Two of the authors (MS and BN) coded the data by linking each fragment of text to one of the concepts from the list. The concepts thus served as an initial coding tree in the program. The relevance and usefulness of the codes and concepts were evaluated and adjusted when necessary. In a last step, we distilled the storyline from the findings and concepts and discussed this within the research team to reach a consensus. The descriptive themes were created by merging codes of the same nature (inductive method). Analytical themes were derived from these descriptive themes via a thorough group discussion. Investigator triangulation was used to obtain more reliable results in almost all stages of the analytical process by means of intense collaboration of different members of the research team, all with their own backgrounds.

Results

Participants and recruitment

Out of the 47 sent e-mails, 13 geriatricians responded and agreed to participate (Table 1). Lack of time due to the Covid-pandemic was the main reason for refusing to participate. However, a large variation in age, years of experience and fields of interest was obtained. The duration of the interviews was between 43 and 68 minutes.

A comprehensive overview of the identified themes is provided in Table 2. In this table, themes were organized into macro level factors (governmental level), meso level factors (region/hospital level) and micro level factors (individual one-on-one level) to get a direct overview of (non-)modifiable factors.

Theme 1 – Geriatricians' role in HF care

All geriatricians reported that HF was highly prevalent in geriatric patients.

> *"First of all, it is something that happens very frequently, we see these patients every day. And they are of course very frail people." – P5*

Because of the high prevalence of HF in the population they cared for, they felt confident in de management of HF.

> *"I have the feeling that I know how to handle it, and if it doesn't work out with the classic therapy, then we have the experience to know what next step we can take. And if we don't succeed, we must contact the cardiologist." – P12*

The geriatricians described their role as holistic, taking all aspects of the patients into account.

> *"What the GP is in primary care, that is the geriatrician in hospital. An all-round specialist for older people. It is a coaching role, a role of overview. – P1*

As specific expertise they reported the management of polypharmacy, therapy optimalization and attention for psychosocial factors. They felt more attention should be paid to education of the patient and family.

> *"Many people know their blood pressure, but not always their weight, and I am shocked about that, certainly in geriatrics." – P6*

One issue was reported repeatedly: the shortage of geriatric beds and a shortage of manpower.

> *"The capacity of the geriatrics department is far too small; we are too few in numbers and there are too few departments equipped to admit those people and that will be a huge problem in the future. The HF population just keeps getting bigger." – P6.*

Theme 2 – Multidisciplinary collaboration

1. Collaboration within the hospital

1.1. Collaboration with the emergency department

There were large differences in emergency room triage decision making. Participants reported this could be based on the patients' geriatric profile, on a geriatric risk profile score, on the presence of a geriatric support team (GST) or resident in the emergency department. Sometimes there were no standardized protocols at all.

"It's a big scandal, It's pure coincidence. (…) Depending on the wind and the position of the moon and the stars, you will end up in one discipline or another." – P8

"In theory there are very good scores for this, but in practice they are not used because they are too time-consuming." – P9

"We have a GST nurse working in the emergency department, during office hours, so they often look along and they often make suggestions." – P2

"There is an internal resident next to the emergency physician, so it is possible that our resident is the first to do the work-up and afterwards consults us and does the admission." – P6

Two geriatricians indicated that all elderly people with HF ended up in geriatrics, and rightly so.

"Most of the elderly and certainly the real geriatric patients that come in with HF are admitted to our ward. (…) That changed because we've been a little firm, those people used to be admitted to cardiology and they treat the heart very well, but the rest of that patient…" – P5

1.2. Collaboration with the cardiologists

All geriatricians stated that they needed to collaborate closely with the cardiologists on HF for echocardiography, diagnosis, and prognosis.

"In the end they play a role as super specialist for us." – P3

1.2.1. Co-management with the cardiologists

They reported it is important they set the same goals and the final responsibility for the decisions must be clear.

"I think you should have the same goals in mind if you want to do co-management, it is difficult to look at the same patient with 2 specialists if they have different treatment goals." – P11

One issue was the difference in vision about orthostatism which was perceived as a lack of geriatric knowledge of the cardiologists by the participating geriatricians. One geriatrician even suggested a permanent geriatric resident in the cardiology ward to prevent these problems.

> *"They must keep up with our vision that the blood pressure is better too high than too low. (...) I think that the cardiologists are not trained for it, it is not their area of interest to conduct a geriatric assessment." – P11*

Some geriatricians believed that a cardio-geriatric co-management may arise. Some had their doubts.

> *"It's always difficult to collaborate with the cardiologists because you are both internists, so you get into each other's fields, it is easier with an orthopedist, they cut, and we think." – P11*

> *"My vision about the future organization of hospitals, that cardiologists are going to be more of a technical person, and less hospitalization, more our support in a kind of co-management." – P10*

One geriatrician participated in a study with co-management with geriatric outreach to cardiology patients (G-COACH (20, 21)). Despite demonstrably superior patient outcomes, there was no structural financial support to continue.

> *"In the end it turned out that the costs are neutral for the government, but the hospital has to integrate, with no extra resources to invest due to the large losses that are allegedly incurred everywhere, at government level the framework must be there to enable multidisciplinary cooperation." – P7*

Financial agreements influenced interdisciplinary collaboration. In some hospitals geriatricians reported to have a large association with all internists. Then there was no financial conflict of interest, which benefited patient care and cooperation.

> *"A pitfall is the "it's my patient" attitude. (...) That is the Belgian healthcare system. The cardiologists earn enough, I think, but I still have the impression that there are many who think that those patients should stay with them. We're not the big earners. (...) The health system should be rewritten, so we would all earn about the same amount, then you will see a shift." – P5*

One issue on macro level was the reimbursement of certain HF medications that could only be done by a cardiologist, not by a geriatrician, and the reimbursement of a coronary artery bypass grafting (CABG) that does not require geriatric advice, unlike a transcatheter aortic valve implantation (TAVI).

> *"It is paradoxical that for less invasive TAVI, people are obliged to visit the geriatrician for reimbursement, but it's only reimbursed after a referral of the GP*

and not after a referral of the cardiologist. (...) Another thing, if you qualify for a CABG, you should not go to a geriatrician, a more severe surgery, it is for the surgeon to decide." – P8

1.2.2. Availability and involvement

In general, they were satisfied with the collaboration with the cardiologists, their availability and accessibility.

"Most of them do make good reports stating what they would suggest, and they are also quick to reach, so if it's not clear in the report, I'll just give them a call. They also call us easily, so I think it's a smooth collaboration here." – P13

Some geriatricians needed a more structured contact, involvement, and follow-up of the cardiologists.

"There is no structural cooperation, we do know each other, so we can easily call or contact each other, but not standardized, there is room for improvement" – P7

They feel they should be involved faster, and the geriatric assessment should be applied more often.

"Patients who are readmitted repeatedly, they have to look at why, let the geriatrician look at it, is there cognition problem at play, if people do not know they have a have fluid restriction, because they forget, nothing will change essentially." – P2

1.3. Collaboration with primary care

Due to the diversity of the electronic medical records (EMR), they experienced a big loss of information from primary care. They therefore advocated for an integrated patient record.

"Those two systems are not similar in any way, not even in the coding." – P10

"It would be better if we are able to work around a particular problem in one integrated record, were we structure the data together, without having to look it up or send letters to each other" – P4

They found the online platforms ("Sumehr", "Vitalink", "CoZo") impractical, with no structure and often not up to date. The system that certain home nurses use *("MyWGK"*) was experienced as much more informative.

"You can see the Sumehr, and I think that's too concise, and it certainly doesn't contain all the information that you need to know. It is not good enough, and the medication lists in it are not always up to date." – P6

They reported a lack of interdisciplinary communication, from a geriatrician perspective they admitted they did not reach out enough to the GP during hospitalization.

"Communication, that could be better on both sides, a good referral letter, but also contact the GP at important moments during hospitalization, to see what their expectation is, what the patient's expectation is, seek their advice when we doubt ourselves." – P1

"I think communication should be easier and faster and I think the time has come to focus on transmural projects and innovation." – P3

They reported difficulties getting through to GPs.

"All of us have our work, you're always disturbing each other, in both directions." – P9

Geriatricians tried to be as accessible as possible for the GP. The GP should make more use of this.

"I was trained in another hospital, there was a general geriatric helpline for GP's, which they called for advice or for a referral. (...) I hardly get any calls from GPs here. Sometimes that should be more if there are problems." – P2

1.4. Collaboration with the geriatric multidisciplinary team

All geriatricians reported to work in a multidisciplinary manner with a geriatric team at their own wards. Differences were reported in the implementation of the internal geriatric liaison. In some hospitals this was activated automatically, in others this had to be requested by the attending physician.

"It is important that every patient with HF receives comparable care, that the elderly with HF admitted at cardiology gets the same care. (...) We want to focus on that, to we make sure that regardless of where the patient is, the right care reaches the patient." – P4

Most geriatricians did not work with a nurse specialized in HF.

"I think it could be helpful because we know that the knowledge and the empowerment of your patients is pretty bad." – P7

One hospital worked together with clinical pharmacists, with the aim to optimize therapy.

"There is a lot of room for optimizing therapy within the cardiovascular area. (...) It is a very useful and pleasant collaboration. (...) We want to focus on the high-risk patients, we don't have the people, the means, nor the time, so we certainly can't see everyone. (...) There is very limited hospital funding for hospital pharmacists, compared to abroad, although we already demonstrated the added value." – P7

2. Transmural care organization

2.1. Collaboration with primary care

They felt follow-up and transmural care organization are important to prevent (re)hospitalization and that this is mainly the role of the GP in collaboration with primary care nurses. However, they experienced often that follow-up was inadequate.

"The follow-up takes place in the first line, he is responsible for the patient and his family to closely monitor his condition, weight, intake of medication. (...) The general practitioner has an important central role." – P3

"I am sometimes amazed about how overloaded some people arrive here, they weigh 15 kilograms too much before an alarm was sounded." – P6

GP's knowledge of HF could be improved, mostly regarding clinical assessment of the fluid balance.

"When I get a question about the kidney function, I ask for the fluid status, I don't always get an unequivocal answer, I need to give my advice. (...) I have noticed that there is very little knowledge about the fluid status." – P9

Geriatricians provided a letter of discharge, with advice and target weights, but rarely call the GP.

Several geriatricians experienced problems in this transmural information exchange.

"We try to keep our letters as concise as possible, especially with the recommendations and the to-dos, and not send extremely long letters." – P4

"They never go home without a letter. But the GP must actually read that letter, we send it digitally as well, but they are not waiting at their mailbox to see who is coming home, I think we might have to communicate more bilaterally" – P12

They reported the function of an external liaison is lacking.

> *"The external liaison has never taken on any shape or volume. While this was the answer to the question of how we go outside to make the connection to the home situation." – P10*

Several geriatricians pleaded for better cooperation with primary care, via a chronic care path. One geriatrician opted for primary care plus. Primary care plus is a new health-care delivery model in the Netherlands, focused on substitution of specialist care in the hospital setting with specialist care in the primary care setting (22).

> *"If we start working together transmurally and streamline and coordinate follow-up, this can have longer and lasting effects for the patient. (...) And you will avoid a lot of hospitalization. (...) You must make agreements, communicate well, and have a good follow-up plan. – P3*

> *"Primary care plus is wonderful, I was trained in the Netherlands, there it happens that internists go to the GP to give advice, I certainly think that would be great if that could be possible." – P2*

Some geriatricians advocate for a HF care program or convention, in which they see themself play an important role.

> *"We should move away from the classical way of thinking; I earn my living doing consultations. Maybe we can invest that money in a joint process and financing, as is the case for diabetes patients, a kind of convention financing. (…). Eventually the patient should be better and gets a better structured follow-up." – P3*

2.2. Structure of follow-up

Geriatricians reported their main role is to be guardians of hospitalized geriatric patients, not to be responsible of follow-up. Therefore, most geriatricians passed on this responsibility of follow-up to the GP or the cardiologist. Some tried to avoid systematic follow-up with the cardiologists.

> *"The follow-up is for the GP, if intensive adjustment is needed, they go to the cardiologist. (…) We must limit the efforts of the transfers to a hospital." – P6*

> *"We have much fewer consultations, because it is organized in such a way that you cannot see all HF patients. (...) We have few chronic trajectories, we have less of a consultation culture." – P2*

> *"We try to avoid follow-up with the cardiologist. (…) If that patient is stable and euvolemic at the time of follow-up, those consultations are useless." – P5*

Most geriatricians exceptionally let their patients return at the day hospital.

> *"Depending on the other problems, if we have a complex patient, we will see that patient again at the day hospital. (…) It's not standard, only if we notice that the patient has a need of more intensive follow-up." – P 11*

However, some geriatricians observed a high number of rehospitalizations among HF patients due to the lack of structured follow-up and did set up specific follow-up structures. One geriatrician was working with a joint follow-up consultation with their cardiologists.

> *"We started with a combined consultation with our cardiologists, they do the ultrasound, and we do everything else. (...) We take a lot of time for those consultations, and it works very well. (...) This way, we see them much less in the emergency room." – P12*

Two hospitals used their geriatric day hospital for intermittent ambulatory IV diuretic therapy. Others used it to facilitate multidisciplinary work.

> *"We have a HF cooperation agreement to keep people out of hospitalization as much as possible through ambulatory intermittent therapy intravenously at the day hospital in collaboration with our cardiologists. – P10*

> *"A day hospital where geriatric patients receive all consults in one day, with an endocrinologist, cardiologist, nephrologist, and geriatrician, I think that would be an added value for the quality of care. (...) But you must get it organized logistically." – P7*

One geriatrician started a HF clinic at their geriatric day hospital, where they follow up geriatric HF patients shortly after hospitalization, with a HF specialist nurse, the geriatrician as the main practitioner and the cardiologist as a consultant. Two geriatricians saw this model as an option for the future.

"We see the patients at the HF clinic 2 or 3 weeks after admission and decide how often they need to come back. (...) We have two types of assessment, we do a HF assessment, and a geriatric assessment. (...) We want to keep patients stable, this way we see a decrease of hospitalizations. (...) This comes across as threatening because it seems that we take over patients, while our model is built as an add-on." – P4

"I think there is potential because these are patients with a high risk of hospital readmissions and mortality, but the added value must be demonstrated compared to conventional therapy." – P7

Theme 3 – Advance care planning

The geriatricians valued advance care planning highly.

"All those people should have an advance care planning. All of them." – P5

"It is one of our roles to discuss with the patient about what he still wants and what he doesn't want, and to discuss what is still feasible for the patient." – P4

However, they experienced a lack of attention for advance care planning among colleagues.

"Absent? Far too little attention for advance care planning?" – P13

They saw a bigger role for the GP, who is better placed to discuss this in stable circumstances at home and for the cardiologists.

"It's not easy when people are acutely bad, to have those conversations, it's easier for the GP in stable circumstances." – P11

"The cardiologist has to take more responsibility, the moment he has a very bad ultrasound, to discuss that with the patient." – P13

The registration of advance care planning with the GP was experienced as problematic.

"People think that their paper that they have filled out with their GP, if it does not come along to the hospital, or if it is not registered in our computer system, then we know nothing about it." – P8

Discussion

Summary of the results

This qualitative interview study that reports on semi-structured interviews with 13 Flemish geriatricians' sheds light on how geriatricians experience multidisciplinary HF care. We identified three themes: the geriatrician's current role in HF care, the multidisciplinary collaboration, and the advanced care planning. Regarding the first theme, since the prevalence of HF among hospitalized patients in geriatrics is high, geriatricians reported to feel confident about HF management and see themselves as the guardians of the patient during hospitalization. Regarding the multidisciplinary collaboration in hospital, there were striking differences in triage at the emergency room. Geriatricians were satisfied with the collaboration with the cardiologists and valued their role, although they reported differences in vision about dealing with geriatric HF patients, perceived as a lack of geriatric knowledge of the cardiologists. The most frequent reported example, where the cardiologists prioritize the heart, geriatricians aim to prevent orthostatic hypotension and give less strict salt free diet instructions. Follow-up and transmural care after hospitalization was valued highly to prevent rehospitalization but most geriatricians didn't see this as their responsibility. They mostly passed on the follow-up to the GP and the cardiologist. Some took this follow-up into their own hands in various forms because of the high rehospitalization numbers (joint consultation, HF clinic or extension of the day hospital function) and many suggested ways to improve the organization of multidisciplinary HF care (primary care plus, care pathways or conventions). In the third theme, advance care planning was seen as a very important aspect of geriatrics, yet they expected more collaboration from both the cardiologist and the GP in this matter.

Comparison with the literature

With respect to geriatricians' current role in HF care, they reported to feel confident in their knowledge and abilities to manage HF. An Italian survey showed a good knowledge of the latest guidelines on diagnosis and management, although a lack of knowledge was noted at certain topics, indicating the need for focused educational campaigns (23). In contrast, a European survey showed a poor knowledge of the relevant guidelines by geriatricians and GPs (24). Therefore, it remains unclear if their feeling of competency correlates with adherence to up-to-date guidelines.

In the second theme, the multidisciplinary collaboration in hospital, different ways to triage patients with HF for admission to the hospital were seen. We found no literature on the ideal way to triage HF patients. For the identification of geriatric patients, a geriatric assessment in the emergency room is useful, and might help decision making to minimize negative outcomes for the patient (25). The collaboration of a geriatric support team and the emergency department is an added value, which can direct the further trajectory of the patient in- or outside the hospital (26). Since our study showed this collaboration has not been incorporated in many hospitals, we believe more implementation of the geriatric support team and geriatric assessment into the emergency room would be valuable.

The geriatricians in our study reported that a lack of geriatric knowledge of cardiologists causes a difference in vision about dealing with geriatric HF patients. The most frequent reported example, where the cardiologists prioritize the heart, geriatricians aim to prevent orthostatic hypotension and give less strict salt free diet instructions. Cardiovascular disease is a disease of aging, more cardiologists are faced with increasing numbers of frail geriatric patients with HF, improved knowledge and attention for the geriatric aspects may lead to reduction of readmissions (27). A survey reported cardiologists need to be more equipped with up-to-date knowledge of geriatric cardiology to give these vulnerable patients a balanced and holistic therapeutic plan of care (28). There is a need for guidelines specifically designed for the older patient with cardiovascular disease (29).

In the collaboration with the cardiologists, co-management was a preferred way of collaboration for several geriatricians. This collaboration has been advocated before to combine the cardiac aspects and the geriatric aspects of the aging patient (30). A systematic review showed a reduced length of stay and number of complications because of geriatric co-management (31). The G-COACH project was an in-hospital project that evaluated the cardiogeriatric co-management model (20). This program significantly reduced functional decline, delirium, infections, obstipation, and improved quality of life (21). Although the added value has been demonstrated, no government or hospital funding were provided to continue this model. Further research on the sustainability of the implementation is needed. Geriatric cardiology is a young field but with opportunities for growth (27).

The impact of an early follow-up visit after discharge on readmission has been proven (32). In this study follow-up after discharge was often given back to GP and cardiologist. A former qualitative study showed GPs fear their central role is coming under pressure because of the increasing workload (15). One geriatrician started a HF clinic within their geriatric day hospital. This geriatrician based her clinic on the Spanish ‘‘STOP-HF-Clinic’’, a structured multidisciplinary outpatient clinic for old and frail patients discharged with HF, which included early follow-up, HF nurses, availability of intravenous treatments and treatment titration. Their intervention resulted in a 50% reduction in all-cause 30-day readmission rate (33). Some other geriatricians implemented intravenous treatments on their geriatric day hospital. This was already shown in other studies that in patients with mild to moderate decompensated HF, it is safe and effective to treat the patient ambulatory with intravenous diuretics. Additionally, this prevented readmission and even resulted in a reduction of mortality (34, 35). One geriatrician started a joint cardio-geriatric consultation to follow-up patients closely after discharge. A randomized control trial compared post-discharge follow-up by cardiologists with joint follow-up by a cardiologist and a geriatrician. They concluded that in older patients a joint follow-up was superior to a cardiologist’s follow-up in reducing readmission (12). Primary care plus is a new health-care delivery model in the Netherlands, focused on substitution of specialist care in the hospital setting with specialist care in the primary care setting (22). A quantitative study about this Primary care plus showed no improvements on health-related quality of life, but it seemed promising to improve quality of care as experienced by patients and to decrease the healthcare costs per patient (36, 37). This study showed that different models were applied in HF care by different participating geriatricians. An unambiguous ideal system has not been defined. More research is needed to develop an ideal follow-up structure.

Geriatricians suggested a more structured multidisciplinary care approach for HF should be developed, suggesting a care pathway for HF, where geriatricians can fill in an important role. GPs reported in a previous qualitative study to be interested as well in a care pathway, with clear instructions for follow-up (15).

As for the third theme of advanced care planning, geriatricians reported they expected more responsibility of GPs and cardiologists to participate in the advanced care planning. The palliative care rate in advanced HF patients, is remarkably low and the initiation of palliative care was dependent on the severity of HF, resulting in delayed palliative care during end-of-live stages (38). In a qualitative study about the perceptions of the cardiologists on multidisciplinary collaboration in HF care, cardiologists noted a lack of structured advanced care planning, reinforced by the unpredictability of HF disease progression (16). Advanced care planning can be relevant to discuss in any stage of health, regardless of the stage of HF (39). The cardiologists should play an active role to increase the patient awareness about advanced care planning (40). The lack of awareness of the patient on his own prognosis and the fact that patients did not initiate these conversations themselves, made GPs hesitate to start the conversation (41).

Strengths and limitations

As far as we know, this is the first qualitative study using semi-structured interviews, to investigate the perceptions of geriatricians about their role in multidisciplinary heart failure care. The strength of this study is the use of the QUAGOL method to guide data analysis, leading to a thorough reading and rereading of the data, which was discussed among the participating authors, to capture the essence of each interview before starting the actual coding process. We conducted purposive sampling in the region of Flanders, Belgium, and recruited geriatricians from different age, backgrounds, working in different types of hospitals in different areas, collecting a broad range of geriatricians' perceptions.

A limitation is the fact that the interviewer is a GP trainee in the region of Flanders, Belgium, which could positively bias geriatricians' responses. Another limitation could be the limited experience of the interviewer with qualitative research. However, a thorough training in semi-structured interview techniques and qualitative data analysis compensated for this. Additionally, investigator triangulation was used to limit this bias as much as possible. Out of the 48 geriatricians who we reached out to, only 13 agreed to participate, a rather low degree of participation, partly due to the Covid-pandemic.

Conclusion

In this qualitative study the geriatricians reported to feel confident about the management of geriatric HF patients and see themselves as the guardians of the patient during hospitalization. Striking differences were seen in the triage at the emergency room. They were satisfied with the collaboration with the cardiologists, although they reported differences in vision about dealing with geriatric HF patients. Geriatricians tend to rely on the GP and cardiologist for the further follow-up of the patient after discharge, however because of the high rehospitalization rates, different projects were set up to take part in this follow-up. They acknowledged the importance of well-organized transmural care and pleaded for a more structured approach. Advance care planning was valued highly but they expected more involvement from both the cardiologist and the GP.

References

1. Chivite, D., Franco, J., & Formiga, F. (2015). Chronic heart failure in the elderly patient. Revista espanola de geriatria y gerontologia, 50(5), 237-246.
2. King, M., Kingery, J. E., & Casey, B. (2012). Diagnosis and evaluation of heart failure. American family physician, 85(12), 1161-1168.
3. Ozierański K., Balsam P., Tymińska A., Peller M., Kapłon-Cieślicka A., Marchel M., Drożdż J., Filipiak K.J., Opolski G.: Heart failure in elderly patients: differences in clinical characteristics and predictors of 1-year outcome in the Polish ESC-HF Long-Term Registry. Pol Arch Med Wewn. 2016; 126: 7–8.
4. Alghamdi, F., & Chan, M. (2017). Management of heart failure in the elderly. Current opinion in cardiology, 32(2), 217-223.
5. Dunlay, S. M., Roger, V. L., & Redfield, M. M. (2017). Epidemiology of heart failure with preserved ejection fraction. Nature Reviews Cardiology, 14(10), 591-602.
6. Wong, C. Y., Chaudhry, S. I., Desai, M. M., & Krumholz, H. M. (2011). Trends in comorbidity, disability, and polypharmacy in heart failure. The American journal of medicine, 124(2), 136-143.
7. Skrzypek, A., Mostowik, M., Szeliga, M., Wilczyńska-Golonka, M., Dębicka-Dąbrowska, D., &
   Nessler, J. (2018). Chronic heart failure in the elderly: still a current medical problem. Folia Medica Cracoviensia, 58(4).
8. Mizuno, M., Kajimoto, K., Sato, N., Yumino, D., Minami, Y., Murai, K., ... & ATTEND Investigators. (2016). Clinical profile, management, and mortality in very-elderly patients hospitalized with acute decompensated heart failure: An analysis from the ATTEND registry. European journal of internal medicine, 27, 80-85.
9. Ponikowski, P., Voors, A. A., Anker, S. D., Bueno, H., Cleland, J. G., Coats, A. J., ... & Van Der Meer, P. (2016). 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. Kardiologia Polska (Polish Heart Journal), 74(10), 1037-1147.
10. UK, N. G. C. (2018). Chronic heart failure in adults: diagnosis and management.
11. Ellis, G., Gardner, M., Tsiachristas, A., Langhorne, P., Burke, O., Harwood, R. H., ... & Shepperd, S. (2017). Comprehensive geriatric assessment for older adults admitted to hospital. Cochrane database of systematic reviews, (9).
12. Herrero-Torrus, M., Badosa, N., Roqueta, C., Ruiz-Bustillo, S., Solé-González, E., Belarte-Tornero, L. C., ... & Farré, N. (2022). Randomized Controlled Trial Comparing a Multidisciplinary Intervention by a Geriatrician and a Cardiologist to Usual Care after a Heart Failure Hospitalization in Older Patients: The SENECOR Study. Journal of clinical medicine, 11(7), 1932.
13. Levy, S., Cole, G., Pabari, P., Dani, M., Barton, C., Mayet, J., ... & Plymen, C. (2021). New horizons in cardiogeriatrics: geriatricians and heart failure care—the custard in the tart, not the icing on the cake. Age and Ageing, 50(4), 1064-1068.
14. McDonagh, T. A., Metra, M., Adamo, M., Gardner, R. S., Baumbach, A., Böhm, M., ... & Kathrine Skibelund, A. (2021). 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: Developed by the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC) With the special contribution of the Heart Failure Association (HFA) of the ESC. European heart journal, 42(36), 3599-3726.
15. Smeets, M., Zervas, S., Leben, H., Vermandere, M., Janssens, S., Mullens, W., ... & Vaes, B. (2019). General practitioners' perceptions about their role in current and future heart failure care: an exploratory qualitative study. BMC health services research, 19(1), 1-10.
16. Raat, W., Smeets, M., Vandewal, I., Broekx, L., Peters, S., Janssens, S., ... & Aertgeerts, B. (2021). Cardiologists' perceptions on multidisciplinary collaboration in heart failure care-a qualitative study. BMC health services research, 21(1), 1-9.
17. Savin-Baden, M., & Howell-Major, C. (2013). Qualititative research: The essential guide to theory and practice. Qualitative Research: The Essential Guide to Theory and Practice. Routledge.

18. Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. International journal for quality in health care, 19(6), 349-357.
19. de Casterlé, B. D., Gastmans, C., Bryon, E., & Denier, Y. (2012). QUAGOL: A guide for qualitative data analysis. International journal of nursing studies, 49(3), 360-371.
20. Deschodt, M., Van Grootven, B., Jeuris, A., Devriendt, E., de Casterlé, B. D., Dubois, C., ... & Flamaing, J. (2018). Geriatric CO-mAnagement for Cardiology patients in the Hospital (G-COACH): study protocol of a prospective before-after effectiveness-implementation study. *BMJ open*, *8*(10), e023593.
21. Van Grootven, B., Jeuris, A., Jonckers, M., Devriendt, E., Dierckx de Casterlé, B., Dubois, C., ... & Deschodt, M. (2022). How to implement geriatric co-management in your hospital? Insights from the G-COACH feasibility study. *BMC geriatrics*, *22*(1), 1-15.
22. Quanjel, T. C., Spreeuwenberg, M. D., Struijs, J. N., Baan, C. A., & Ruwaard, D. (2017). Evaluating a Dutch cardiology primary care plus intervention on the Triple Aim outcomes: study design of a practice-based quantitative and qualitative research. *BMC health services research*, *17*, 1-11.
23. Lelli, D., Pedone, C., Leosco, D., Onder, G., Antonelli Incalzi, R., & Società Italiana di Gerontologia e Geriatria. (2020). Management of heart failure: an Italian national survey on fellows/specialists in geriatrics. *Aging Clinical and Experimental Research*, *32*, 2049-2055.
24. Remme, W. J., McMurray, J. J., Hobbs, F. R., Cohen-Solal, A., Lopez-Sendon, J., Boccanelli, A., ... & Cline, C. (2008). Awareness and perception of heart failure among European cardiologists, internists, geriatricians, and primary care physicians. *European Heart Journal*, *29*(14), 1739-1752.
25. Haeseler-Ouart, K., Arefian, H., Hartmann, M., & Kwetkat, A. (2021). Geriatric assessment for older adults admitted to the emergency department: a systematic review and meta-analysis. *Experimental Gerontology*, *144*, 111184.
26. Devriendt, E., De Brauwer, I., Vandersaenen, L., Heeren, P., Conroy, S., Boland, B., ... & Milisen, K. (2017). Geriatric support in the emergency department: a national survey in Belgium. *BMC geriatrics*, *17*(1), 1-8.
27. Dodson, J. A., Matlock, D. D., & Forman, D. E. (2016). Geriatric cardiology: an emerging discipline. *Canadian Journal of Cardiology*, *32*(9), 1056-1064.
28. Alfaraidhy, M. A., Brown, J. P., Beamer, B. A., Blumenthal, J. B., Forman, D. E., & Kheirbek, R. E. (2021). cardiologists' knowledge and attitude toward geriatric cardiology training. *Circulation*, *144*(Suppl_1), A11638-A11638.
29. Boerlage-van Dijk, K., Siegers, C. E., Wouters, N. T., Faes, M. C., Verbunt, R. A., Geertman, J. H., ... & Ottervanger, J. P. (2022). Specific recommendations (or lack thereof) for older patients with cardiovascular disease in the current European Society of Cardiology guidelines: From the Dutch Working Group of Geriatric Cardiology of the Netherlands Society of Cardiology (NVVC) and Special Interest Group Geriatric Cardiology of the Netherlands Society for Clinical Geriatrics (NVKG). *Netherlands Heart Journal*, 1-5.
30. Azad, N. A., & Mielniczuk, L. (2016). A call for collaboration: improving cardiogeriatric care. *Canadian Journal of Cardiology*, *32*(9), 1041-1044.
31. Van Grootven, B., Flamaing, J., Dierckx de Casterlé, B., Dubois, C., Fagard, K., Herregods, M. C., ... & Deschodt, M. (2017). Effectiveness of in-hospital geriatric co-management: a systematic review and meta-analysis. *Age and ageing*, *46*(6), 903-910.
32. Feltner, C., Jones, C. D., Cené, C. W., Zheng, Z. J., Sueta, C. A., Coker-Schwimmer, E. J., ... & Jonas, D. E. (2014). Transitional care interventions to prevent readmissions for persons with heart failure: a systematic review and meta-analysis. *Annals of internal medicine*, *160*(11), 774-784.
33. Pacho, C., Domingo, M., Núñez, R., Lupón, J., Moliner, P., de Antonio, M., ... & Bayes-Genis, A. (2017). Early postdischarge STOP-HF-clinic reduces 30-day readmissions in old and frail patients with heart failure. *Revista Española de Cardiología (English Edition)*, *70*(8), 631-638.

34. CDOE, T. H. T. P. (2020). Ambulatory Intravenous Diuretic Clinic Associated with Short-Term Risk Reduction in Mortality and Rehospitalizations in Patients Discharged with Heart Failure. *Rhode Island Medical Journal*, *103*(9), 16-21.
35. Banerjee, P., Tanner, G., & Williams, L. (2012). Intravenous diuretic day-care treatment for patients with heart failure. *Clinical medicine*, *12*(2), 133.
36. Quanjel, T. C., Spreeuwenberg, M. D., Struijs, J. N., Baan, C. A., & Ruwaard, D. (2019). Substituting hospital-based outpatient cardiology care: The impact on quality, health and costs. *PLoS One*, *14*(5), e0217923.
37. van den Bogaart, E. H., Spreeuwenberg, M. D., Kroese, M. E., van Hoof, S. J., Hameleers, N., & Ruwaard, D. (2021). Patients' perspectives on a new delivery model in primary care: A propensity score matched analysis of patient-reported outcomes in a Dutch cohort study. *Journal of Evaluation in Clinical Practice*, *27*(2), 344-355.
38. Takahama, H., & Izumi, C. (2021). Palliative care for patients with advanced heart failure: When is the optimal timing of advanced care planning?. *International journal of cardiology*, *328*, 143-144.
39. Johnson, M., & Janssen, D. (2019). Advance care planning: a ‘hard’skill for cardiology clinicians?. *Heart*, *105*(17), 1298-1299.
40. Denniss, D. L., & Denniss, A. R. (2017). Advance care planning in cardiology. *Heart, Lung and Circulation*, *26*(7), 643-644.
41. De Vleminck, A., Pardon, K., Beernaert, K., Deschepper, R., Houttekier, D., Van Audenhove, C., ... & Vander Stichele, R. (2014). Barriers to advance care planning in cancer, heart failure and dementia patients: a focus group study on general practitioners' views and experiences. *PloS one*, *9*(1), e84905.

Table 1: Participant characteristics

ID	Sex	Age (years)	Years of experience	Type of hospital	Province of hospital
1	Male	64	38	Tertiary	East Flanders
2	Female	36	1	Tertiary	Flemish Brabant
3	Male	56	24	Tertiary	Flemish Brabant
4	Female	52	21	Secondary	Limburg
5	Female	54	25	Secondary	West Flanders
6	Male	46	16	Secondary	Antwerp
7	Male	48	16	Tertiary	Flemish Brabant
8	Male	34	4	Secondary	Antwerp
9	Female	35	3	Secondary	West Flanders
10	Female	60	30	Secondary	Antwerp
11	Female	33	2	Secondary	East Flanders
12	Female	34	3	Secondary	East Flanders
13	Female	34	3	Secondary	East Flanders

Table 2: Thematic matrix

Thematic matrix: Geriatricians' perceptions about their role in multidisciplinary heart failure care. A qualitative study.				
Themes			Facilitators	Barriers
Current role of the geriatricians	HF Management		*Experience in HF management*	*Lack of geriatric hospital capacity*
	Geriatric Expertise		*Holistic perspective* *Polypharmacy* *Social aspects*	*Lack of patient education*
Collaboration within the hospital	Emergency department		*GST in the ER* *Internal resident in the ER*	*Lack of structured triage*
	Cardiology department	Macro level		*Reimbursement medication and invasive therapy*
		Meso level	*Added value of co-management*	*Lack of clear role definition* *Lack of structured cooperation* *Lack of financial incentives for collaboration*
		Micro level	*Availability and accessibility* *Mutual respect for their fields' expertise*	*Lack of geriatric knowledge of cardiologists*
	Primary care	Macro level		*Lack of integrated electronic health record* *Lack of clear communication channels*
		Meso level		*Lack of multidisciplinary*

				meeting
		Micro level	*Availability of geriatricians*	*Lack of availability of GP's*
	Paramedics	Internal liaison	*Added value of internal liaison*	*Lack of reaching out to internal liaison*
		HF-specialized nurses		*Not present at geriatric wards*
		Pharmacists	*Added value of pharmacist*	*Lack of funding of hospital pharmacists*
Transmural care organization	Cross-setting disease management	Macro level		*Lack of HF care program or convention*
		Meso level	*Use of day hospitals*	*Lack of transmural information exchange* *Lack of chronic care path* *Lack of use of external liaison*
		Micro level		*Loss of follow-up after discharge with the GP* *Lack of knowledge of the GP about HF*
Advanced care planning			*Geriatricians' expertise*	*GPs' and cardiologists' hesitancy to approach the subject*

Additional file 1: COREQ (COnsolidated criteria for REporting Qualitative research) Checklist.

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	6
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	7
Occupation	3	What was their occupation at the time of the study?	7
Gender	4	Was the researcher male or female?	7
Experience and training	5	What experience or training did the researcher have?	7
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	7
Participant knowledge of the interviewer	7	What did the participants know about the researcher? E.g. personal goals, reasons for doing the research	7
Interviewer characteristics	8	What characteristics were reported about the interviewer/facilitator? E.g. Bias, assumptions, reasons, and interests in the research topic	7
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? E.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	6
Participant selection			
Sampling	10	How were participants selected? E.g. purposive, convenience, consecutive, snowball	6

Method of approach	11	How were participants approached? E.g. face-to-face, telephone, mail, email	6
Sample size	12	How many participants were in the study?	8
Non-participation	13	How many people refused to participate or dropped out? Reasons?	8
Setting			
Setting of data collection	14	Where was the data collected? E.g. home, clinic, workplace	7
Presence of non-participants	15	Was anyone else present beside the participants and researchers?	no
Description of sample	16	What are the important characteristics of the sample? E.g. demographic data, date	7
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	6
Repeat interviews	18	Were repeat interviews carried out? If yes, how many?	no
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	7
Field notes	20	Were field notes made during and/or after the interview or focus group?	7
Duration	21	What was the duration of the interviews or focus group?	8
Data saturation	22	Was data saturation discussed?	7
Transcripts returned	23	Were transcripts returned to participants for comment and/or correction?	No
Domain 3: Analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	7
Description of the coding tree	25	Did authors provide a description of the coding tree?	7
Derivation of themes	26	Were themes identified in advance or derived from the data?	7
Software	27	What software, if applicable, was used to manage the data?	7
Participant checking	28	Did participants provide feedback on the findings?	no

Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? E.g. participant number	7
Data and findings consistent	30	Was there consistency between the data presented and the findings?	8
Clarity of major themes	31	Were major themes clearly presented in the findings?	8
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	8

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. International Journal for Quality in Health Care. 2007. Volume 19, Number 6: pp. 349 – 357

Additional file 2: Interview topic guide

Translated version (from Dutch to English):

1. Experiences of geriatricians in the care of patients with heart failure

- What are your experiences as a geriatrician in the care of patients with chronic heart failure?
- What is going well in the care of patients with chronic heart failure?
- What could be done better?

2. Role of the geriatrician in the care of heart failure patients

- How do you experience your role as a geriatrician in the care of heart failure patients?
- What do you think is going well?
- What do you think is going less well?
- What do you think could be done better in the future?

3. Multidisciplinary collaboration in the care of heart failure patients

- How do you experience multidisciplinary collaboration in the care of heart failure patients?
- Who do you consider to be the most important partners in this multidisciplinary collaboration?
- Is there a specific collaboration with the cardiologists and how do you experience this?
- What do you think is going well?
- What do you think is going less well?
- What do you think could be done better in the future?
- Is there a specific collaboration with the general practitioners and how do you experience this?
- What do you think is going well?
- What do you think is going less well?
- What do you think could be done better in the future?
- How is the communication with the general practitioner?
- How do you experience the collaboration specifically with the paramedical professions?
- Which paramedical professions do you involve?
- What do you think could be done better in the future?
- How do you experience advance care planning in the multidisciplinary collaboration?
- What do you think is going well?
- What do you think is going less well?
- What do you think are the pitfalls in this multidisciplinary collaboration?