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Lindhardt, Christina Louise; Mattsson, Thea Otto; Mebrouk Jørgensen, Jette

Published in:
Applied Nursing Research

DOI:
10.1016/j.apnr.2020.151268

Publication date:
2020

Document version:
Accepted manuscript

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Citation for published version (APA):

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Point-of-care used in the treatment of older patients with cancer. The perception and experience of nurses

Christina Louise Lindhardt a, b, d, *,
Thea Otto Mattsson c, d
Jette Mebrouk a

a University College Absalon, Sorø, Denmark
b Department of Geriatric Medicine, Odense University Hospital, Odense, Denmark
c Department of Department of Oncology Odense University Hospital, Odense, Denmark
d Department of Clinical Institute, University of Southern Denmark, Odense, Denmark

*Corresponding author at: University College Absalon, Denmark.
Email address: clindhardt@health.sdu.dk (C.L. Lindhardt)
https://doi.org/10.1016/j.apnr.2020.151268

Keywords: Older patients with cancer, Healthcare technology, Qualitative research, Nurses' perception of Point-of-care testing

Abstract
Background: Nursing tasks are changing as the proportion of people over the age of 65 years is increasing and is expected to double over the next four decades. New innovative solutions such as Point of Care Treatment (POCT) are being tested in oncological settings in order to optimise treatment, and this changes the nurse management in oncology. There is a need to explore oncology nurses' perception and experience when implementing the innovations in order to understand the implications for nursing and the treatment of older patients with cancer.

Methods: Qualitative research with face to face interviews with nurses working in oncology. Sample size (Mean = 8). Data were recorded verbatim, transcribed, and thematic analysis used.

Results: Three themes were identified: a, A great advantage in nursing, b, Change of practice in nursing care, c, Challenges in shifting roles. A majority of the participants had the perception that POCT treatment was an advantage not only for the nursing profession but for the older patients in cancer treatment as well. Monitoring the older patients with cancer at home would prevent them from accessing the hospital and get exposed to viral infections as well as saving them the journey to the hospital. Involvement from relatives, clear communication and management of the device and data transferred is essential.

Conclusions: The use of POCT in oncology will shift the nurses' tasks on the ward as well as improve treatment for older patients with cancer.
1. Background
Nursing tasks are changing as the proportion of people over the age of 65 years has increased in Europe and is expected to double over the next four decades, representing 27% of the population by 2050 (The Danish Cancer Society, n.d.-a; Ewertz et al., 2016). The population diagnosed with cancer is also expected to increase correspondingly (The Danish Cancer Society, n.d.-b). In Denmark, almost half of the patients with cancer are above the age of 65 years. This proportion is expected to increase (The Danish Cancer Society, n.d.-a). With an increasing cancer population, and within this, a rising number of the older and more vulnerable population, the economic burden of cancer is rapidly increasing (Tangka et al., 2010). There is a demand in healthcare to implement innovative approaches to safeguard the care and treatment for patients with cancer. Older frail patients with cancer have an increase of comorbidity and a higher risk of side effects (Legrand et al., 2012; Sharma et al., 2015). The nursing care of older patients with cancer requires an understanding of their diverse needs and the intersection of cancer and ageing (Stewart, Leak, & Puts, 2016).

Point-Of-Care Testing (POCT) is defined as “medical diagnostic testing performed outside the clinical laboratory close to where the patient is receiving care” (Stewart et al., 2016). POCT is essential for the rapid detection of analysis near to the patient, which enables better diagnosis, monitoring, and management. It enables quick medical decisions and early alert of changes in patient health (Vashist, Luppa, Yeo, Ozcan, & Luong, 2015). The POCT, devices are often small handheld portable devices that are used by clinical staff working in a laboratory, or by the patients themselves (Stewart et al., 2016). POCT has developed significantly since the invention of the urine dipstick in 1957, which is the first POCT (Josko, 2017). POCT is being used in the treatment of diabetes and in anticoagulant treatment where patients monitor their International Normalized Ratio (INR) levels at home, and the results from the INR are to be entered directly into the patient's electronic medical record at the hospital from the POCT (Christensen et al., 2011; Shaw, 2017; Vaughan et al., 2020). However, studies have shown that compliance is at a higher level if the patients participate in a hospital led course before the patients are home monitoring (Heu, Welborn, & Nagykaldi, 2016).

The background for this study was a large-scale international EU Horizon 2020 cross border research project InnoCan with partners from Denmark and Germany (http://innocan.org, 2018). As part of this project, a feasibility study was conducted exploring if a POCT device would allow older patients with cancer (>65 years) to sample their blood specimen at home (Mattsson, Lindhart, Schöley, Friis-Hansen, & Herrstedt, 2020). The principal idea was that the POCT device generates blood sample results that will indicate whether the patient is ready to receive the next cycle of chemotherapy or other anti-cancer treatment. A device such as POCT that provides all the necessary blood results required for pre-chemotherapy/anti-cancer treatment assessment was not available at the start of the study (Mattsson et al., 2020). The feasibility study would identify if an interest in such a device existed, the patients’ abilities to use a POCT device, and their interest in using it at home was explored (Mattsson et al., 2020).

Before this study, a literature review was conducted to explore the literature available on nurses’ perception and experience of using POCT in their treatment and care of patients with cancer (Dogherty, Harrison, Graham, Vandyk, & Keeping-Burke, 2013; Liikanen & Lehto, 2013). At
the time of the review, no studies were found that fitted the search criteria. However, since then increasing literature on technology in cancer treatment has been published (Heynsbergh, Heckel, Botti, & Livingston, 2018; Vaportzis, Clausen, & Gow, 2017; Vestergaard, Ostervang, Danbjorg, & Dieperink, 2019).

All the above lead to our research question: How do nurses working in oncology with older patients perceive and experience the use of POCT?

This study aimed to explore oncology nurses` perception based on their experience in treating and caring for older patients with cancer. The nurses' perception and experience will inform future practice for nurses and generate knowledge to increase the quality of nursing care in oncology.

2. Methodology

2.1. Overview

A qualitative descriptive method, including a thematic analysis based on eight semi-structured individual interviews, was applied. The qualitative approach was chosen to explore the nurses' perception and experience as it allows for in-depth dialogue in the interviews where further understanding is facilitated (Kvalitative metoder - qualitative methods, 2020). A qualitative descriptive approach, such as thematic analysis may be used when a straightforward phenomenon is investigated, as in this study (Braun, 2006).

In the analytical process and presentation of data, the researcher remained focused on generated data. It is a description of the participants' experiences in a language similar to that used by the participants themselves (Braun, 2006). The qualitative semi-structured interview allows the researcher to modify the questions asked during the dialogues in the interviews, which enable the researcher to explore other facets than those that have not yet appeared. The analysis of emergent themes depends on the perceptions, inclinations, sensitivities, and sensibilities of the researcher (Braun, 2006); hence the perspectives of the interviewers and research team plays an important role.

2.2. Ethical considerations

Ethical approval was obtained from the Ethical Committee of Science in the Region of Southern Denmark id S-20160184 and notified to the Danish Data Protection Agency no. id 2012-58-0018. All participants gave informed consent. Personal data was stored according to good clinical practice, and confidentiality according to Danish law.

2.3. Participants and research setting

Eight nurses, in different positions within an oncology department at Odense University Hospital, participated in this study. Five of them were clinical nurses from the ambulatory or in-patient setting. One nurse held a position as Patient Case Manager, and two participants were nurses in managerial positions. The participants were between 24 and 58 years of age. They had between one and 27 years of experience in nursing, including at least one year in the oncology setting, which was an inclusion criterion for the study. The participants were recruited through their respective management structures. Upon request of the research team, the Nurse Manager distributed the information material about the study to selected nurses.

2.4. Data collection

An interview guide guided the interviews, and two nurses, who otherwise were not involved in the study, participated in a pilot interview. This interview resulted in minor corrections in language and content. The semi-structured interviews took place before the implementation of the
POCT device in the patients’ homes and while the device was tested in the oncology ward between May and July 2017. Before the interview, the participants received further information about the study, the participants' right to withdraw and the informed consent form signed by the participant and researcher. The interviews were audio-recorded and lasted for 40–60 min, during the participants working hours in a secluded room at the hospital. Two experienced researchers from the research team conducted the interviews. The interviews were transcribed verbatim.

2.5. Thematic analysis
A thematic analysis inspired by the six steps proposed by Braun and Clarke (Braun, 2006) guided the process. In the first step, two researchers read and re-read the content to obtain accuracy and to eliminate typing errors. The researchers discussed the transcribed content. In the second step, a record of first impressions and the observed similarities and differences was made. In the third step, the data was divided systematically into meaningful codes. In the fourth step, these initial codes were noted and reviewed, and the final codes became clear. In the fifth step, the coded data was developed into a thematic map, where the researchers viewed the alignment of themes and subthemes. In the sixth and final step, each theme was analytically refined, and clear definitions were made for each theme. This step was done to ensure the validity of the qualitative description and credibility of the thematic analysis (Braun, 2006).

3. Results
The participants indicated that implementing POCT would benefit the care and treatment for older patients with cancer using a POCT device to obtain blood samples before chemotherapy or other anti-cancer treatment. They pointed out that a POCT device would be not only beneficial and desirable for the older cancer patients, but also benefit other adult patients. Their perception was that the device could be used in other settings, for example, detecting infection in the patients. They also highlighted potential challenges that may occur before implementing a POCT device. The key findings are presented below in three themes.

3.1. A great advantage in nursing
The first theme identified the participants' perception of benefits using a POCT device at home as it would relieve many patients from extensive travel, the day before chemotherapy or other anti-cancer treatment. The POCT device was perceived as potentially adding value to oncology patients’ lives, in terms of increased quality of life. It was in particular especially noted that older oncology patients, of whom many also depend on others for transport, would benefit. Patients in general who choose to keep working during cancer treatment were mentioned as a group of patients who may benefit from a POCT implementation. According to the participants, time was a factor as patients travelling back and forth between home and hospitals to have their blood drawn, was referred to as being a waste of time for the patients: “Concerning the quality of life, if they could avoid the travel the day before therapy, using time and energy on that, and have it done at home, I think that would be a great relief for the patient”. (Participant 2)
Decreasing travel time was seen as a direct benefit for the patient. However, a positive influence on the healthcare system, such as financial savings, was also mentioned. The participants described rules and cost of transport, which according to Danish law, in many cases fall upon the hospital. They pointed out that fewer patients' travel also would decrease the cost for the hospital:
“I also think that there are many savings in doing it that way because people get reimbursed the money for driving”.

(Participant 3)
Besides transport for blood sampling before treatment, the participants spoke about other situations in nursing care and treatment and where a POCT solution potentially could be a suitable, e.g. for patients with neutropenia or thrombocytopenia, requiring transport or admission. The participants explained that many patients call the oncology department with questions about fever or bleeding, which often results in a journey to the hospital to have their blood sampled: “I think in the case of our patient case manager, who receives many phone calls from patients, there it would be possible to gather information quickly and catch many things if they could call and tell about their blood sample results”.

(Participant 8)
According to the participants, the POCT device would be beneficial in periods with influenza epidemics, where measurement of the patients’ vital status is needed. Unnecessary admission of patients who would require isolation, if coming to the hospital due to viral infection could be avoided, which would decrease the risk for the other patients in the oncology ward:
“It would be a great advantage to use [the POCT device] if a patient gets a fever at home, and they recently have a treatment where they risk a low blood cell count. Then we could take blood samples at home and avoid isolating them [at the hospital] for some time, just to send them home again because the samples were acceptable, and we rather would like to keep them at home”.

(Participant 4)
Financial savings in the public healthcare system, due to less transport of the patients was, therefore, in addition to the personal benefit to the patients, seen as a potential opportunity. However, one of the participants mentioned a concern of missing out on the face to face contact with the patients. She stressed that nurses rely on observing changes in the patient by face to face communication.

3.2. Change of practice in nursing care
Another theme was the participants’ perception of the implementation of a POCT device. Although they spoke positively about the idea of having patients draw their blood at home, they also raised their concern about changing their nursing practice. Different aspects that the nurses considered as absolutely preconditional before successful implementation of POCT were raised. Aspects included the reliability of the technology as well as the potential impact that it would have on the nursing care and treatment. Participants unanimously pointed out the necessity for the POCT device to be able to measure all relevant tests and thereby be able to facilitate results for a complete set of laboratory results. While it falls beyond the focus of this study to examine which results from these might be, it is worthwhile noting that the participants explained that it would be a variety of different tests depending on the different treatment options:
“When the patients have their blood drawn, why not just take all the vital blood parameters at the same time”.

(Participant 8)
The participants questioned the reliability of the POCT test result and expressed concern if they could trust the results of blood sampled and analysed at home on the little POCT devise, compared to the blood that a professional had sampled in the hospital's laboratory. Some of them explained that they recognised that it would take some time for nurses to trust the POCT device's ability to measure correctly. However, they trusted that professionals in the hospital would check the accuracy of the device.
The participants addressed the security of the transmission of data between the patients' homes and the hospital. The transfer of data between the POCT device and directly into the patient's electronic medical record (ERM) at the hospital should be secure and reliable. It was argued, that if the blood sample results were critical, it should be notified immediately to the nurses in the oncology department so they could act accordingly. The nurses' workload and routine on the ward is a challenge to the transmission of data, in particular, if the out-patients clinic is closed and other nurses are responsible for managing the incoming calls from all oncology patients:

“It is crucial that where the results will show up that there is someone to manage that system around the clock”.
(Participant 5)

The participants suggested that the POCT device somehow could be connected to the printer on the ward, which already is used to receive critical results from the patients:

“The results would have to be connected to an alarm printer. It is surely important that a system is created… that we secure that the results will get to us”.
(Participant 6)

While this was seen as a potential solution, it also raised concern as nurses on the ward often are occupied. Monitoring the alarms from the printer would require new routines in the daily work-processes for the nurses. Furthermore, upgrading of nursing qualifications in relation to the use of the POCT device in case patients would call for advice and help would be needed:

“Nurses need different competencies which enable them to give different information to patients, and how they need to react to different situations, but I think this [POCT device] would be fantastic”.
(Participant 5)

3.3. Challenges in shifting roles
The third theme identified was potential challenges in shifting roles for nurses using the POCT device and navigating with the technology and the care and treatment of the patients. One of the potential challenges was related to the decision process of deciding which patients should be offered, the POCT device. Further, it was mentioned by the participants how they should deal with issues like the involvement of relatives, patients' rights to decline the use of the device and last but not least misuse of the device, e.g. if the patient chose to sample more times than needed in a day.

It was acknowledged that although a POCT option has advantages for the older oncology patients, there will be some patients who will decline the option of using the POCT device at home. The participants pointed out that patients should have the right to decline the POCT option without it would have consequences for their treatment and care. The participants argued that nurse and patient guidelines should be updated and available to address the shift of nursing tasks:

“We need to look at our guidelines, to address this new possibility for our treatment”.
(Participant 1)

The participants drew on their nursing experience from oncology and perceived that some patients would potentially be too frail to manage the POCT device independently. Thus, they saw the families of the patients as a resource able to support the patients or take the entire responsibility of managing the POCT device at home. However, it was noted that the relatives should have the right to decline such responsibility.

The relatives were mentioned in the interview as a resource in the decision-making process of whether the patient should use a POCT device at home or not while the patient has autonomy
over their treatment and can consent or opt-out based on their own choices, the relatives would know the patients and their capabilities best.

Ethical concerns were raised; would the introduction of POCT harm the patients or the quality of care about cancer treatment. The participants articulated that an option, as well as the safeguarding of the tasks in the patients' home, could be involving the district nurses in managing the POCT device and sampling the blood – this in cases where the patient cannot manage the task or responsibility themselves. The participants acknowledged that potentially the POCT could be misused by the patients, such as checking blood other than their own or taking their blood samples too frequently which would adversely increase the cost and perhaps make the patients unnecessarily worried about their results:

“I would fear they [the patients] perhaps could become a little too careful and test themselves too many times because they would be worried…it would result in many questions, meaning the more you test, the more questions will arise, and that aspect, the department also has to deal with…”

(Participant 1)

“I think that there must be a guideline telling when they may use it, based on an indicator of how frequently they may use the POCT device at home”.

(Participant 7)

While there are benefits and advantages for patients and relatives if blood draw is analysed through a POCT, the shifting roles create potential challenges, that nurses and other healthcare professionals must consider as part of the implementation of a POCT approach.

4. Discussion

As noted, the purpose of this study was to explore oncology nurses' perception and experience when implementing an innovative healthcare technology such as POCT, that would allow patients to sample their blood at home before chemotherapy or other anti-cancer treatment. Overall, the results support the existing literature (Vaughan et al., 2020; Vestergaard et al., 2019) through literature describing POCT and healthcare is sparse. In the literature available, nurses' general attitudes toward healthcare technology are found (Cohen, Kampel, & Verloo, 2017; Vestergaard et al., 2019).

Three themes appeared to be consistently relevant, A great advantage, Change of nursing care and Challenges in shifting roles.

4.1. A great advantage

It was identified that a majority of the participants perceived the implementation of POCT as an advantage not only for the nursing profession but also for the older patients in cancer treatment. Moving the monitoring of the patients from hospital to home would subsequently decrease the often-unnecessary hours spent travelling between home and hospital during anti-cancer treatment. The decreased travel time would, according to the participants increase safety for the patients as they were not exposed to bacteria and virus at the hospital. Further, it may improve the quality of life for the patients allowing them to spend more time at home, and less inconvenient time travelling and waiting for blood results at the hospital (Lohman et al., 2018; Vestergaard et al., 2019). It was evident that the nurses' tasks in the oncology ward would change. The time administering anti-cancer treatment, physical and mental care would be reduced as patients would remain at home if the POCT test showed that the blood counts were low. Subsequently, this extra time would enable the nurses to attend to other tasks in the ward. Communication with the patients and relatives would be undertaken by telephone and subsequently create more time for nurses.
4.2. Challenges in shifting roles
As mentioned in the results, the nurses experienced a concern of shifting the workload from one area to another. For example, spending extra administrative time taking phone calls from patients and relatives and supervising those who are insecure about using the technology (Risling, 2017). However, the time spent with administrative tasks as well as communicating with the patients may be forwarding by patients experiencing a smoother transition throughout their treatment and quality of life (Lohman et al., 2018; Mattsson et al., 2020).

Nurses' fear of the introduction of technology in treatment and care has been mentioned in the literature, fearing they may lose their intuition and the clinical observation of the patients (Braun, 2006; Vaportzis et al., 2017). The financial side of implementing POCT was discussed by the participants as being beneficial, as the reimbursement of transport cost to the patients would be reduced. Further, it would reduce the number of beds on the ward as well as the management and planning the admissions and flow of patients on to the ward; besides, cost benefits would accrue as beds would not be standing empty.

It is interesting to note that while the nurses were in favour of implementing innovations and technology, they still had a certain number of concerns. They were worried that the technology would not work, and results could not be trusted. The patient's network and their family were raised as important co-participants during the cancer treatment. However, some patients do not have any immediate family to help them using the device; this is of concern. In other studies, it is recommended that their family are co-informed and thus involved in the treatment and care (Harvey et al., 2019; Ostergaard et al., 2020).

Changing daily routines on the oncology ward and making sure shift were covered with sufficient and knowledgeable staff when the patients were making phone calls to the hospital were of concern. Changing the routine and tasks is a topic in nurse management (Krogh, 2016). Thus, the POCT device can ease the immediate workload; it seems to be generating other concerns which may not be covered by technology such as immediate observations (Martinsen, 2017; Risling, 2017). In addition, management on the ward by a professional nurse in charge at all shifts ensuring the incoming data with blood results are being monitored and stored in databases for later assessment. The participants mentioned concerns such as inadequate communication which may lead to patients feeling insecure, which may result in them re-testing themselves unnecessarily at home. This issue would have to be explored further and accurate patient information applied (Lohman et al., 2018; Zadvinskis, Garvey Smith, & Yen, 2018). Best practice from implementing POCT and technology, in general, may be taken into consideration (Lohman et al., 2018; Risling, 2017; Shaw, 2017).

Strategies within most healthcare system apply that, the healthcare professionals ensure an environment where the safety, treatment and care of patients come first (hospital OU, 2016). The nursing tasks and care are facing increased complexity, and by implementing technology nursing tasks and care which are transforming the way nursing care is conceptualised and delivered on a different level as seen in this study, this is supported by Risling (2017). The nurses' professionalism must embrace new challenges which follow the implementation of, e.g. POCT. Vaportzis et al. (2017) refer to communication as being vital, particularly as older patients are having barriers such as health literacy and lack of clarity in instructions and support (Vaportzis et al., 2017; Watson, 2019). This dilemma increases the need for a concise and motivating communication between the nurse, patient and relatives in order to facilitate the successful implementation of
healthcare technology (Spencer & Wheeler, 2016). Concerns that healthcare technology cannot replace the intuition that nurses use on daily bases and the participants interviewed were aware that they must not lose their skills and not only rely on technology measurements when caring for patients in anti-cancer treatment (Martinsen, 2017).

4.3. Challenges in shifting roles
This study identifies challenges for the participants as they had to consider their perception about the implementation of a POCT device and which consequences that may have as professional nurses. The participants recognised that the Change of roles would have an impact on their work routines, workload and daily organisation, due to the complexity in treating older patients with cancer using technology (Vestergaard et al., 2019). However, introducing healthcare technology in oncology and shifting the nursing tasks was positively accepted. Ethical concerns raised by nurses concerning healthcare technology are mentioned in the literature as essential as it is safeguarding the nurses' professionalism during their treatment of care of patients (Pols, 2015, 2017). The participants were aware that shifting responsibility from nurse to patients in the implementation process of POCT may be a challenge and would include patient education and communication skills (Stewart et al., 2016). Attention to the complexity of older patients with cancer is essential to design a gentle anti-cancer treatment and care adapted to the patients' individual needs (Lohman et al., 2018; Mattsson et al., 2020).

The participants approached the dilemma that cancer not only affects the patient but the entire family surrounding the patient (Heynsbergh et al., 2018; Laidsaar-Powell et al., 2016). In nurse management of older cancer patients, including the relatives and opt for a family-oriented approach is essential when introducing POCT (Coyne, Dieperink, Ostergaard, & Creedy, 2017). By implementing POCT, the roles would shift, and the patient would be in charge of administrating the device and blood sampling. The patient's family may be involved in the decision-making when planning the implementation of the technology in the patients' homes and thus make them co-participants in supporting the patient; this would help the patient as everybody is provided with the same information (Korhonen, Nordman, & Eriksson, 2015; Laidsaar-Powell et al., 2016).

Face to face communication is one of the core tools of nursing practice (Martinsen, 2017). The participants empathised that it was a dilemma that by introducing POCT, the patients were unable to receive a face to face communication when using the POCT at home. An argument was that this might diminish the level of information forwarded by the nurse when communicating on the phone. In particular, the concern was for older patients with cancer, but some of the nurses mentioned that patients, in general, may find the self-administering difficult due to lack of communication (Vaportzis et al., 2017). Besides, concern was mentioned about health literacy, particularly amongst older patients. Healthcare technology information may have to be presented in more than one way, e.g. by educational videos (Inkyoung, Schmidt, & Lee, 2015).

Information provided in a clear day to day language, both written and oral, might be the key to a successful shift for nurses managing the transition for patients self-administrating of the POCT at home. Here, the nurses' knowledge and use of healthcare technology are of great importance in order to facilitate the introduction and management of POCT in the patient's home (Locsin, 2015). A professional nursing approach, when demonstrating the POCT device as well as allowing time for questions from the patients and relatives, is one of the critical tasks from the nurse.
An evident, concise, professional attitude amongst the nurses on the oncology ward would be essential as well as leadership from the management.

Interdisciplinary cooperation with the Municipality should be established if necessary, in order to safeguard the older patients who, feel insecure managing the POCT device themselves (Strudwick, 2015; Zadvinskis et al., 2018). This cooperation would bridge the two sectors and benefit the patients in their own homes.

In this study, the participants perceived that Point-Of-Care Testing as a technology potentially could be an essential tool in the everyday nursing treatment and care of older patients with cancer. Implementation of POCT will change the management of the nursing tasks on the oncology ward as well as being cost-effective as patients travel less and do not occupy beds on the ward (El-Osta et al., 2017). Apart from benefitting the nursing tasks in the daily clinic, it provides quality of life for the patient under treatment (Baratelli et al., 2019). Communication between nurses and patients or relatives must be concise and with the use of, e.g. video demonstration to ensure the understanding of patient and relative. Nurses working in oncology with patients in anti-cancer treatment must weigh the pro and cons when introducing POCT and attention must be paid to the risk of leaving the patient in a state of loneliness and social isolation by implementing health technology in the patients’ home.

4.4. Comments on methods
The main strength of this study is the use of a validated and scientifically robust qualitative method. However, we managed to generate a density of data, as well as to reach data saturation. The results may be influenced by the setting and workplace culture. Thus, results can not be generalised; however, some transferability to a similar setting is possible. This study is explorative, as little literature is available on the subject of POCT. To explore the theme further, we suggest similar studies in different clinical settings.

5. Conclusions
Our study found that the nurses working in an oncology ward identified the implementation of POCT in the treatment and care of older patients with cancer as essential and useful. Careful management and thorough introduction of the POCT is important particular to older patients. POCT will be of great advantage for the nurses on the ward as well as the patients who will avoid travel from home to hospital have blood tests. POCT will change the tasks of the nurses on the ward where results from the home testing will be transferred by technology and shift of the roles both for nurses and for patients and relatives. Increased awareness of communication skills, health literacy and cooperation with the Municipality may be needed in the process. This study addresses, how nursing tasks changes and how planning for the future and a call to action for the nursing profession in order to conceptualise its position on exponential technological growth and fundamental care provision, as well as safeguarding the older patients with cancer.

5.1. Strengths and limitations of the study
The study was conducted as a feasibility study on nurses’ perception and experience of using POCT in their treatment and care of older patients with cancer. The low number of participants (Mean = 8) may be a limitation; however, data saturation was reached. Further research is needed in order to develop assessment programs, which enables nurses to adapt healthcare technology in their care of particular older cancer patients.
Funding
The study is part of the project InnoCan, which is funded by Interreg Deutschland-Danmark with funds from the European Regional Development Fund.

Declaration of competing interest
On behalf of all Authors, the corresponding Author states that there is no conflict of interest related to this study.

Acknowledgement to our proof reading company Camb. Consulting.

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