

# Handover of care and of information by community midwives, maternity care assistants and Preventive Child Healthcare professionals, a qualitative study

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## ARTICLE INFO

### Article history:

Received 6 June 2018

Revised 12 June 2019

Accepted 14 July 2019

### Keywords:

Handover of care

Handover of information

Primary midwifery care

Maternity care

Preventive Child Healthcare

Vulnerable families

## ABSTRACT

**Introduction:** Handover of care has been internationally acknowledged as an important aspect in patient safety. Families who are vulnerable due to low socio-economic status, a language barrier or poor health skills, benefit especially from a decent handover of care from one healthcare professional to another. The handover from primary midwifery care and maternity care to Preventive Child Healthcare (PCHC) is not always successful, especially not in case of vulnerable families.

**Aim:** Obtaining insight in and providing recommendations for the process of handover of information by primary midwifery care, maternity care and PCHC in the Netherlands.

**Methods:** A qualitative research through semi-structured interviews was conducted. Community midwives, maternity care nurses and PCHC nurses from three municipalities in the Netherlands were invited for interviews with two researchers. The interviews took place from February to April 2017. The qualitative data was analyzed using NVivo11 software (QSR International).

**Results:** A total of 18 interviews took place in three different municipalities with representatives of the three professions involved with the handover of care and of information concerning antenatal, postnatal and child healthcare: six community midwives, six maternity care assistants and six PCHC nurses. All those interviewed emphasized the importance of good information transfer in order to provide optimum care, especially when problems within the family are present. In order to improve care, a large number of healthcare professionals preferred a fully digitized handover of information, providing the privacy of the client is warranted and the system works efficiently. To provide high quality care, it is considered desirable that healthcare workers get to know each other and more peer agreements are prepared. The 'obstetric collaborative network' or another structured meeting was considered most suitable for this exchange.

**Conclusion:** This study shows that the handover of care and of information between professionals in the fields of antenatal, postnatal and child healthcare is gaining awareness, but a more rigorous chain of care and collaboration between these disciplines is desired. Digitizing seems important to improve the handover of information.

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## Introduction

Handover of care implies “temporarily or permanently transferring the professional responsibility and accountability for some or all aspects of care for a patient or client or for a group of patients, to another healthcare worker or professional group” (Merten et al., 2017). Handover of care has been internationally acknowledged as an important factor in patient safety and multiple initiatives have been started to prevent mistakes in the handover of care

**Table 1**  
The Dutch perinatal care system.

Antenatal care in The Netherlands is based on the concept that pregnancy, childbirth, and the postpartum period are fundamentally physiologic processes. Obstetric risk selection is performed by community midwives or obstetricians/gynecologists and is based on the 'List of Obstetric Indications' (LOI), which specifies manifest conditions that define a low, medium, or high-risk pregnancy. An obstetrician/gynecologist will care for women with a high-risk pregnancy whereas community midwife may provide care to women with a low or a medium risk. Women with a low or medium risk can choose to have a home birth or an out-patient hospital birth. In case of an uncomplicated institutional delivery the mother and child will be discharged home within a few hours. Regardless of the risk indication based on the LOI, the community midwife will be responsible for care of the mother when discharged home during the postpartum period. Maternity care is provided by maternity care assistants and will start at home, or – less frequently – in a primary care birth center, under supervision of the community midwife. Following delivery, a maternity care assistant visits and supports the family at home on a daily basis for the first eight to ten consecutive days. Initially maternity care covers six to eight hours a day but this is tapered off towards the end of the care period.

(Reference: Lagendijk, Been et al., BMC Pregnancy Childbirth).

**Table 2**  
The Dutch child preventive healthcare.

Preventive Child Healthcare (PCHC) in the Netherlands is executed by autonomous PCHC organizations and provides information, early identification of growth and developmental problems and where necessary, providing additional help to parents/care takers and children. Additionally, PCHC executes the national vaccination program.

PCHC is offered to all children from birth until 19 years old, by the Dutch government, free of charge. For children in the age group zero until four years old, consultations comprise of growth and developmental measurements, regular visits to the national vaccination programme and parenting advice.

PCHC exists in the Netherlands over 100 years. Approximately 6000 professionals work in different PCHC organizations, including PCHC physicians, PCHC nurses, nursing specialists and physician assistants. In some organizations speech therapists and behavioural scientists are part of PCHC. PCHC for children aged zero until four years old is executed in different neighborhoods by well-baby clinics affiliated to one of the PCHC organizations.

(Reference: Dutch Centre for child healthcare, [www.ncj.nl](http://www.ncj.nl)).

(Moore et al., 2003). Families who are vulnerable due to low socioeconomic status, a language barrier or poor health skills, benefit especially from a good handover of care from one health professional to another (Groene et al., 2012) (Tables 1 and 2).

In the Netherlands, handover of care and of information has also gained awareness in the past few years. In 2014 the Dutch Health and Youth Care Inspectorate published a report on the study into the collaboration between primary midwifery care, maternity care and Preventive Child Healthcare (PCHC) in the Netherlands, on recognizing signals from clients, adequately deploying additional care and a thorough handover of information to each other (The Health Care Inspectorate, 2014). This study showed that the handover from community midwives and maternity care assistants to the PCHC was not always successful, especially not in case of vulnerable families. Therefore, the professional and client associations have developed a national guideline with concomitant products (Beckers et al., 2011, 2016). These products concerned an 'exemplary collaborative agreement' and a 'minimal information set' for the handover from primary midwifery care and maternity care to the PCHC. The main focus points were children growing up in safety and health, a continuity of care, identifying vulnerable families and where needed the deployment of a so-called 'warm handover' to PCHC (Beckers et al., 2016). A 'warm handover' entails an oral handover to another professional, in addition to the paper or digital handover. This oral handover can be held by telephone or by face to face contact. The exact interpretation and execution of a

'warm handover' can differ between municipality, organization or collaborative network.

### Research program Healthy Pregnancy 4 All-2

The handover in antenatal, postnatal and child healthcare in the Netherlands has been studied for the research program Healthy Pregnancy 4 All-2 (HP4All-2). The focus of this program contains risk assessment, customized care and an improved collaboration between primary obstetric healthcare, maternity care, PCHC and other municipal care providers (Waelput et al., 2017). One of the research themes of HP4All-2 is to study whether the current method of handover of care and of information from community midwives and maternity care assistants to the PCHC professionals, since the development of the national guideline, has led to a seamless approach to healthcare within the chain of antenatal and child healthcare.

### Aim of this study

The research questions prior to this study were: 1) How is care for vulnerable families organized 2) Who is responsible for the handover of care and of information, and 3) What is necessary for an efficient and complete handover?

## Method

### Setting

In the Netherlands, the community midwife transfers the care for mother and child to the maternity care assistant after childbirth. During the maternity care period (the first eight days after childbirth), the community midwife still bears final responsibility for the medical care of the mother and her child. At the end of the maternity care period (8th day after childbirth), the community midwife and maternity care assistant handover care to the general practitioner and to the PCHC, of which the latter will visit the family on the 14th day postpartum. This does not imply an early handover of information cannot or should not take place between community midwives, maternity care and PCHC, for instance when a prenatal home visit by the PCHC is indicated or during a meeting of the 'obstetric collaborative network'. An obstetric collaborative network is an inter-professional care system in which community midwives, obstetricians, pediatricians, and maternity care providers share local guidelines and protocols. Fig. 1 shows how the antenatal and child healthcare, in which multiple handovers take place, is organized in the Netherlands (Vos et al., 2015).

### Participants

This study took place in three of the ten participating municipalities in the HP4All-2 program. (8) In each of the selected municipalities, two community midwives, two maternity care assistants and two PCHC nurses were invited for a semi-structured interview by email, telephone or through their managers. Within the three municipalities the interviewed professionals were employed at different primary midwifery practices, maternity care organizations and PCHC locations and were deployed in both urban and rural areas.

### Data collection

The semi-structured interviews were conducted in the months of February, March and April 2017 at the workplace of the professional, in the professional's residence or at the Erasmus Medical

## Medical professionals involved in antenatal, postnatal and child healthcare, in the Netherlands

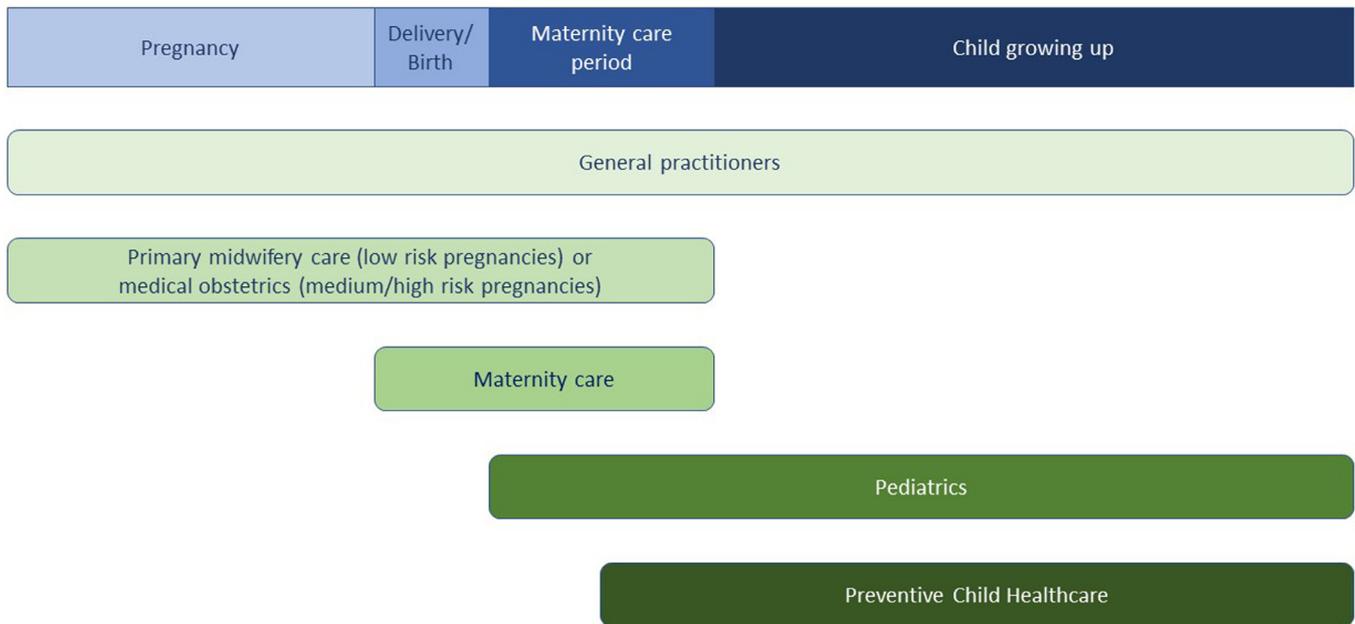


Fig. 1. Organization of antenatal, postnatal and child healthcare in the Netherlands.

Center in Rotterdam. Beforehand, interviewees were informed on the backgrounds of the interviewers and the motivation of the research topic concerned. The interview was conducted by two researchers (MM and DV or MM and AR), the primary researcher, conducted the interview (MM) and the other researcher (DV or AR) ensured all questions were solicited and answered. Additional or more in-depth questions were recorded. Audio recordings were made of all interviews with permission of the interviewee. The questions for the interviews were compiled according to the guidelines for qualitative research with as many open ended questions as possible (Bowling, 2002). The questions compiled prior to the interviews can be found in Appendix 1. The order of the questions was conducted analogously for all 18 interviews.

### Analyses

Thematic content analysis was applied. The 18 interviews were transcribed by a research assistant and checked by one of the authors (MM). Hereafter, the written copy was submitted to the participants for approval of content and the accuracy of the interview. After approval, the name of the interviewee was removed and ID-codes were produced. NVivo11 software (QSR International) was used for the analyses. Every question was linked to the accompanying answers, producing sets of answers per subject. Every themed set was coded, to facilitate analyses by code.

### Results

All those interviewed were female, their ages ranged from 25 to 55 years old and their work experience ranged from two to 25 years. The average duration of the interviews was 60 min.

Using thematic content analysis we identified the following categories: 'content of handover', 'logistics of the handover process', 'responsibility for the handover', 'agreements on the handover', 'digital handover and privacy', 'involvement of other medical professionals', 'current quality of the handover and future aspirations'.

### Content of handover

It was discovered that using the developed protocols, the information that was transferred is generally identical in the participating municipalities. Main differences concerned the extensiveness of information and the possibility of transferring a certain risk profile. There also proved to be differences in the risks that can be assessed and the possibility of addressing personal observations. Especially family structure and home environment, the nutrition and weight (increase) of the child were considered to be important for PCHC by those interviewed. Two midwives and one PCHC nurse were of the opinion that specific information concerning pregnancy or delivery to be less relevant to the PCHC. Examples of the certain information were the mother's blood type or specific obstetric interventions during the delivery.

In answer to the question: "What is important information for the PCHC to receive?" midwife 5 replied: "... data on the mother, where she lives, whether she works, I don't know if that's relevant, maybe important medical stuff if that is relevant." ... "How the delivery went, is sort of the question, but maybe a few basic things about the delivery: whether it was a vaginal birth, for instance, but not everything. Then more detailed information about the child. And remarkable issues in the psychosocial area. Whether it's a stable family."

In answer to the question: "What is important information for the PCHC to receive?" maternity care assistant 5 replied: "Specifically the things that differ are important. Insecurity of the mother, social problems, certain behavior of the parents, how do the parents interact with the baby, do the parents need help."

In answer to the question: "What is important information for the PCHC to receive?" PCHC nurse 2 replied: "... any complications during pregnancy. Specifically during the maternity care period; the interaction in the family, how does the family manage the household, how is the hygiene, often its written in the handover. Weight change and feeding of the baby, does the weight decrease rapidly,

*because then I should take further actions. Of course I follow the last weight measurement of the maternity care assistant in order for me to adjust the feeding policy, if necessary."*

#### *Logistics and responsibility*

A large majority of those interviewed usually complete two handover documents at the end of the first week after delivery: a digital handover by the community midwife and a paper handover by the maternity care assistant. In the majority of municipalities the paper handover for the PCHC is left behind with the family by the maternity care assistant. In some neighborhoods, the arrangement is met, where the maternity care assistant transports the handover document to the PCHC location. Sometimes, there is a joint handover by the community midwife and maternity care assistant to the PCHC, where they each fill in their part of the paper document and/or both sign the handover document. A joint oral handover mainly takes place when there is motivation for a so-called 'warm handover', for instance when problems within the family are present. Sometimes the 'warm handover' can be organized in the family residence, with all parties present including (one of the) parents. Three professionals indicated that a 'warm handover' together with the parents would be the ideal situation, especially if there are concerns in the family. Most of those interviewed thought a joint handover as standard protocol would be an improvement. A minority of the professionals did not find a jointly signed document necessary. The majority of the community midwives considered themselves as finally responsible for the handover to the PCHC. Maternity care assistants and PCHC nurses most often shared the opinion that they all are jointly responsible, all being responsible for their own part in the chain of handover. Most of the maternity care assistants and midwives stated that they have no insight into how the PCHC receives and processes the handover documents. The PCHC nurses said that in most cases the handover document can be found in the residence of the family. It sometimes happens that there is information missing on the handover document, or that the document is not with the family. There is a general arrangement in PCHC that the handover document is scanned into the digital patient file or the information from the handover is manually entered into the digital file at the PCHC location.

In response to the question: "How does the PCHC receive the handover?" PCHC nurse 6 answered: "There is an agreement nowadays that the maternity care assistant leaves the handover form with the family. We used to get the handover beforehand, that was preferred in my opinion because it gave you information prior to the consultation. Now you start a conversation and don't see the handover form until that moment, that's a pity. Nowadays the midwife sends us a digital handover form. It has become two separate things."

In response to the question: "Who is responsible for the handover?" midwife 1 answered: "I think the midwife ultimately, but I think it is necessary that the maternity care assistant provides her share of the handover herself. PCHC facilitates the handover."

In response to the question: "Who is responsible for the handover?" maternity care assistant 3 replied: "maternity care and in case of particularities the community midwife."

#### *Agreements on the handover*

Interviewees are generally satisfied with how the other professions live up to the agreements regarding the handover. Motives not to adhere to the agreements are: uncertainty regarding the

protocol, too much workload, smaller maternity care organizations not being involved in the development of the protocol/ the signing of the collaboration agreement, and the handover document arriving too late at the PCHC. Solutions mentioned are: "everyone using the same handover document", "adaptation of the Information and Communication Technology (ICT)", "improved communication and/or improved collaboration in the 'obstetric collaborative network'", "obtaining additional information by phone", "organizing meetings with all professionals involved" and "arranging a standard 'warm handover' were the home visit bij PCHC overlaps with the maternity care assistant being present with the family".

In response to the question: "How do the other professionals live up to the agreements?" PCHC nurse 1 said: "It doesn't often happen that there is information missing from the handover, that is an exception. Maternity care assistants are good at detecting problems, they know how to find us and are well-informed about the work agreements."

In response to the question: "What can be improved in the handover process?" PCHC nurse 1 replied: "Small maternity care organizations, who did not sign the agreement, do not use the new protocol/ handover document."

In response to the question: "What can be improved in the handover process?" midwife 2 replied: "An improved warm handover from secondary or tertiary care, we should involve general practitioners more often, not a large document, a simple telephone call or face-to-face handover can sometimes be just as efficient."

In response to the question: "Why do other professionals sometimes not live up to the agreements?" maternity care assistant 1 said: "Not everyone uses the protocol in the same manner, some items in the protocol are not clear or the PCHC nurse does not take the handover document with him/her. "

Most of those interviewed stated that there are agreements on the handover of information to the PCHC during pregnancy. In all three municipalities (or in several neighborhoods within the municipality) PCHC offers a prenatal home visit when indicated by the community midwife or obstetrician. When a prenatal home visit is indicated by primary midwifery care, medical obstetrics, or social welfare the PCHC nurse schedules an appointment with the pregnant woman to assess the care she needs and gives support during pregnancy onwards.

#### *Digital handover and privacy*

In the three municipalities involved in this study, none of the maternity care organizations employ a digital handover. According to the maternity care assistants, this is because of concerns regarding the security of personal data. Other reasons mentioned are 'being comfortable with using paper forms', financial considerations, the risk of information being sent too late digitally and the fact that other organizations use a different digital system. Some maternity care assistants mentioned that it could be difficult to discuss sensitive subjects with clients, for example if she does not feel safe when alone in the family home. A number of midwives stated that they sometimes do not handover information, to guarantee the privacy of the client as much as possible.

In response to the question: "Is the ICT system adjusted to the handover, and if not, why not?" maternity care assistant 4 said: "No, because of the privacy. It would be practical if the joined handover would be transferred digitally."

In response to the question: “Is the ICT system adjusted to the handover, and if not, why not?” PCHC nurse 2 said: “I don’t know why, maternity care does not have a laptop or Ipad.”

In response to the question: “Is the ICT system adjusted to the handover, and if not, why not?” midwife 4 said: “We specifically chose a paper handover. I think it’s because every organization uses a different digital system.”

#### *Involvement of other medical professionals*

##### *General practitioner (GP)*

According to most, the role of the GP in the information handover of mother and child is minimal. The community midwife and the PCHC physician do most regularly confer with the GP. Those interviewed stated that the role of the GP in the care for mother and child is an important one and they emphasize that this role deserves more attention.

In response to the question: “What is the added value of other medical professionals to the information handover?”, midwife 2 said: “The GP has a long relationship of care with the patient and therefore needs to have an overview of their medical history. I think he/she needs to be informed if there is really something going on, especially if it is in the best interest of the safety of the family.”

##### *Medical specialists*

The pediatrician and gynecologist/obstetrician mainly become involved in the handover when they have treated the child or mother respectively. Maternity care assistants and PCHC nurses reported that in such cases, they are generally in touch with the nurses of the medical specialties concerned. Contact is often by phone or in person at the hospital. In one of the three selected municipalities, the maternity care assistant comes to one of the hospitals before the family goes home, so that oral handover can take place with the obstetric nurse, clinical midwife or physician at the hospital.

In response to the question: “What is the added value of other medical professionals to the information handover?”, maternity care assistant 2 said: “maternity care can respond better to certain situations when they’re fully informed.”

In response to the question: “What is the added value of other medical professionals to the information handover?”, PCHC nurse 3 said: “... It’s very important for us to be aware of medical issues. ... we should follow-up on it.”

#### *Current quality of the handover and future aspirations*

Most are not aware of the nationally developed guideline (6). Five of those interviewed think this guideline exists, but have never seen or read it. One of those interviewed was actually informed about the content of the guideline. As points of improvement for the future, the interviewed professionals stated that there should be a nationally identical handover agreement and that the handover should preferably be digital. There should be more collaboration between all professionals involved, with the provision of more feedback from all parties. Many professionals said they would prefer to give and receive a ‘warm handover’ and more joint handovers, especially in case of a vulnerable pregnant woman and a vulnerable family. Possible solutions mentioned are setting up regular teams per municipality or neighborhood, and participation of maternity care and PCHC in the ‘obstetric collaborative network’ to ensure healthcare workers get to know each other and will collaborate with each other more often.

In response to the question: “What can be improved in the handover process?” maternity care assistant 1 replied: “one system for transfer of information, all working with the same protocol/ guidelines, preferably digital of transferring by mail to the PCHC.”

In response to the question: “What can be improved in the handover process?” maternity care assistant 3 replied: “Always a warm handover between maternity care and PCHC.”

In response to the question: “What can be improved in the handover process?” PCHC nurse 2 replied: “The handover should be more complete. Preferably, all maternity care organizations should use the same handover document.”

In response to the question: “What can be improved in the handover process?” PCHC nurse 4 replied: First, a joined warm handover between maternity care and PCHC, for the handover between midwife and PCHC a joined warm handover is more difficult to organize. Second, a joined digital handover.”

In response to the question: “Where should the implementation of an improved handover take place?” midwife 2 replied: “We have a joined meeting, a certain ‘obstetric collaborative network’ between primary and secondary care.”

In response to the question: “Where should the implementation of an improved handover take place?” midwife 5 replied: “In a working group with all professionals involved.”

## **Discussion**

### *Previous literature*

The midwife-woman relationship has been identified as the vehicle in which personalized care, trust and empowerment are achieved in antenatal healthcare (Perriman et al., 2018). This finding also seems evident in the handover from community midwives and maternity care assistants to PCHC professionals, in which the established relationship with one care provider should be continued by the subsequent care provider involved. A systematic review on the collaborative relationship between midwives and public health nurses emphasized the positive views on interprofessional collaboration, on both sides, but also stressed on several barriers that hinder an appropriate partnership. These barriers were mainly poor communication, limited resources, and poor understanding of each other’s role (Aquino et al., 2016). Our study also addresses poor communication (e.g. information lacking from the handover document or no handover by telephone or face-to-face) and poor understanding of each other role (e.g. on all sides professionals were not fully aware of the job content of the other professionals). Olander et al. stressed on the development of communication pathways for midwives and health visitors to improve care provided to women during and after pregnancy in the United Kingdom (Olander et al., 2019). These communication pathways have been developed in the Netherlands, where the next phase has been initiated: improving those pathways and adhering to them. Previous evidence has highlighted the importance of standardizing handover procedures and systems to promote communication and collaboration in order to ensure patient safety (Yu et al., 2018). This is in line with the need for a standardized, preferably, digitized handover, in our study. McCloskey et al. highlighted patient experiences with patient presence during handover. In their study patients and families describe bedside handover positively, feeling more informed and engaged in care. These findings support the need of the professionals in our study who expressed the urgency of a warm (joined) handover when the family concerned is present (McCloskey et al., 2019).

### Strengths and limitations

One strength of this study is that the community midwives, maternity care assistants and PCHC nurses have been interviewed in different municipalities in the Netherlands. These professionals were employed in both urban and rural areas. One limitation of this study is the possibility of selection bias. The professionals could sign up for the interview through their managers; probably those with a greater affinity for the subject were more inclined to do so. Another limitation is that professionals have been interviewed in only three municipalities. We think it is realistic to assume similar results will be found in other municipalities, because of the diversity of the municipalities in which this study took place. Still, one should be cautious in generalizing the results to the national situation.

### Implications of this study

This study shows that several initiatives have been initiated in the past few years on the municipal and organizational level to improve the handover of information. Examples are the intensification of handover during pregnancy and the early involvement of the PCHC through prenatal home visits for vulnerable pregnant women. Even when this has not been implemented throughout the whole municipality, it has been tackled independently by individual organizations. In spite of the steps taken, there is much to be gained regarding information handover when it comes to efficiency and collaboration within the healthcare chain. This study showed that there are no protocols or guidelines for a 'warm handover' in the participating municipalities. In general, it depends on the professional sensing that 'something is off' in the family concerned. Hence, the nationally developed guideline needs more attention on the municipal and organizational level to create awareness for those working with clients/patients. The three professional groups all desire a fully digitized information handover in antenatal, postnatal and child healthcare, so that data can be exchanged safely and on time, provided the privacy of the client can be guaranteed. By joint organization of care, the care for the family will improve in both quality and efficiency. By focusing on the family, they will receive satisfactory care at the right time. Presumably, in every country caregivers need to collaborate with each other and face the same problems in handover and communication when it comes to pregnant women, young families and newborns. All over the world antenatal and postnatal care is delivered and this manuscript portrays a Dutch example, from which others could gain knowledge of.

### Conclusion and implications for practice

Our results show that there is attention to the handover of information between professionals in antenatal, postnatal and child healthcare and in identifying vulnerable families, but awareness on national guidelines and the intensification of care is needed. The three professions involved know where to find each other when necessary, but not every selected municipality has a structured organized meeting. The 'obstetric collaborative network' appears to offer a solution, provided maternity care and PCHC can participate during these meetings. This has already been realized in several municipalities. Digitizing the handover appears essential to the improvement of the handover process. 'Warm handover' is considered valuable by the three professions involved, and should occur more often in the opinion of most professionals. Clearer local agreements and knowledge of the social map of the neighborhood could possibly improve the handover. Municipalities and the healthcare organizations involved should work together to get different healthcare

workers in touch with each other. This will help ensure a better continuity of care.

### Conflict of interest

All authors declare to have no conflicts of interest.

### Ethical approval

Not applicable to this study. Verbal and written informed consent were given by the participants.

### Funding sources

The research team has received funding from the [Ministry of Health, Welfare and Sports](#) (Grant no. [318804](#)) in order to execute the Healthy Pregnancy 4 All program. The funders had no role in the study design, data collection and analyses, decision to publish or preparation of the manuscript.

### Acknowledgments

We would like to thank the primary midwifery care practices, maternity care organizations, and Preventive Child Healthcare organizations for facilitating this study. Great gratitude goes to all interviewees who participated in this study, without their participation, this study would not have been possible.

### Authors' contributions

MM and DV or MM and AR conducted the interviews, MM conducted the analyses, MM and DV wrote the first version of the manuscript, all authors interpreted the results, MK supervised the study, ES initiated the study.

### Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.midw.2019.07.012](https://doi.org/10.1016/j.midw.2019.07.012).

### References

- Bowling, A., 2002. *Research Methods in Health- Investigating Health and Health Services*. Open University Press.
- Aquino, M.R., Olander, E.K., Needle, J.J., Bryar, R.M., 2016. Midwives' and health visitors' collaborative relationships: a systematic review of qualitative and quantitative studies. *Int. J. Nurs. Stud.* 62, 193–206.
- Beckers, M.C.B., et al., 2011. Positionpaper on Handover of Information from Maternity Care and Primary Midwifery Care to Preventive Child Healthcare. Dutch Institute on Child and Youth Health (NCJ), Utrecht, The Netherlands T. i. h. w. *gegevensoverdracht*.
- Beckers, M.C.B., et al., 2016. Factsheet for the Handover of Obstetric Care Providers and Maternity Care to Preventive Child Healthcare. Dutch Institute on Child and Youth Health (NCJ), Utrecht, The Netherlands T. i. h. w. *gegevensoverdracht*.
- Groene, R.O., Orrego, C., Sunol, R., Barach, P., Groene, O., 2012. "It's like two worlds apart": an analysis of vulnerable patient handover practices at discharge from hospital. *BMJ Qual. Saf.* 21 (Suppl 1), i67–i75.
- McCloskey, R.M., Furlong, K.E., Hansen, L., 2019. Patient, family and nurse experiences with patient presence during handovers in acute care hospital settings: a systematic review of qualitative evidence. *JBI Database Syst. Rev. Implement. Rep.* 17, 754–792.
- Merten, H., van Galen, L.S., Wagner, C., 2017. Safe handover. *BMJ* 359. <https://www.bmj.com/content/359/bmj.j4328>.
- Moore, C., Wisnivesky, J., Williams, S., McGinn, T., 2003. Medical errors related to discontinuity of care from an inpatient to an outpatient setting. *J Gen Intern Med* 18, 646–651.
- Olander, E.K., Aquino, M., Chhoa, C., Harris, E., Lee, S., Bryar, R.M., 2019. Women's Views of Continuity of Information Provided During and After Pregnancy: A Qualitative Interview Study. *Health and Social Care Community*.
- Perriman, N., Davis, D.L., Ferguson, S., 2018. What women value in the midwifery continuity of care model: a systematic review with meta-synthesis. *Midwifery* 62, 220–229.

- The Health Care Inspectorate, 2014. *The Necessity of Improvement for the Collaboration Between Maternity Care and Preventive Child Healthcare for Safe Antenatal, Postnatal Care and Child Care*. Utrecht, The Netherlands.
- Vos, A.A., van Voorst, S.F., Waelput, A.J., et al., 2015. Effectiveness of score card-based antenatal risk selection, care pathways, and multidisciplinary consultation in the healthy pregnancy 4 all study (HP4ALL): study protocol for a cluster randomized controlled trial. *Trials* 16, 8.
- Waelput, A.J.M., Sijpkens, M.K., Lagendijk, J., et al., 2017. Geographical differences in perinatal health and child welfare in the Netherlands: rationale for the healthy pregnancy 4 all-2 program. *BMC Pregnancy Childbirth* 17, 254.
- Yu, M., Lee, H.Y., Sherwood, G., Kim, E., 2018. Nurses' handoff and patient safety culture in perinatal care units: nurses' handoff evaluation and perception of patient safety culture at delivery room and neonatal unit in South Korea. *J Clin Nurs* 27, e1442–e1450.