Birth Centre Care in the Netherlands: added value?!

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Chapter 07

Transfer to the birth centre

A secondary analysis of the Dutch Birth Centre study

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Introduction

The KNOV practical guidance 'Continuous support during childbirth in primary care' recommends an early face-to-face assessment during labour to determine the woman's current stage of childbirth [1]. Apart from the external examination and auscultation of the fetal heart, a digital vaginal examination (VE) should be offered during this assessment unless contractions are absent and spontaneous rupture of membranes is suspected or an immediate reason to refer the woman to secondary care is apparent. The findings of the examination, including the VE should be discussed with the woman and her birth companion(-s). The overall assessment of the situation, the findings of the VE and the needs and wishes of the woman in labour, determine the subsequent management of labour until the next assessment. For those women who do not plan to give birth at home, the possible moment of transfer to the planned birth location (the birth centre or the hospital) will be discussed at this point as well. If the medical need for referral has already arisen, the woman will be transferred directly from home to the obstetric unit (secondary care).

The number of birth centres in the Netherlands have been rising since the beginning of this century [3,4]. The Dutch Birth Centre Study (DBCS) developed a new definition for these centres (see box 1) [5]. The aim of this sub-study, is to describe the transfer process for nulliparous women who plan to give birth in a birth centre. Where do these women finally give birth, how many women have a VE at home before they are transferred to the birth centre, and is there any connection between the performance of a VE at home and the chance of referral to secondary care during labour?

Box 1 • Definition of a birth centre:

> Birth centres are midwifery-managed locations that offer care to low risk women during labour and birth. They have a homelike environment and provide facilities to support physiological birth. Independent community midwives take primary professional responsibility for care. In case of referral the secondary caregiver (obstetrician or paediatrician) takes over the professional responsibility of care [5].

Methods

For this sub-study, existing data from the DBCS were used, which were collected from 1 July 2013 to 31 December 2013[6]. During the study period, community midwives were asked to record data for each birth that started in their care and for which they were responsible. In particular, data were collected on all VEs carried out both at home and in the birth centre, and the progress of labour. If applicable, in addition to the planned and final place of birth, the location of the woman at the moment of referral was recorderd, as well as the corresponding medical reason for referral. The full description of the data collection can be found elsewhere [6]. For this sub-study, only the data of nulliparous women who planned to give birth in a birth centre were used. Because of the very small number of inclusions, the data collected from women who gave birth in free-standing birth centres (n=33) have not been used.

Only data of women who actually transferred to a birth centre, were used for the second part of this study. Women who had missing data of the examinations carried out at home before transfer, were excluded. We carried out a logistical regression analysis to determine the differences in risk of transfer to the secondary care. All data were analyzed in SPSS version 22.0 (SPSS Inc., Chicago, IL, USA.).

Results

We included 906 term nulliparous women who planned to give birth in a birth centre. The women had a mean age of 29.6 years (SD 4.5) and 79.9% were of Dutch descent. In total 45% of included women lived in an urban area (defined as >= 1500 people/km2) and 68.9% had an average socio-economic position (income, profession and education) based on the four digits of the postal code [7]. Mean gestational age at the time of birth was 280 days (SD 7.4).

Transfers of all nulliparous women who planned to give birth in a birth centre are presented in figure 1. During labour 69% (n=621) of the women were transferred to a birth centre, 23% (n=204) of women were transferred directly to secondary care and 9% (n=81) remained at home, chose a hospital birth under responsibility of the primary care midwife, or became medium-risk during labour[1]. Of all women included in this sub-study, 29% (n=267) gave birth in a birth centre, 3% gave birth at home and 2% of

[1] When a medium-risk situation arises during labour, the community midwife advises the woman -due to a potential increase in risk during birth- to give birth on the obstetric unit, but under the responsibility of a community midwife. There is no referral, but the community midwife is assisted by an obstetric nurse instead of a maternity care assistant (who is the usual assistant for a community midwife, regardless the place of birth). (NB this footnote is supplementary to the original publication)

women gave birth in hospital under responsibility of a primary care midwife. Reasons for transfer and place at the time of transfer, are presented in Table 1. Almost a third of all women were transferred during labour because of a request for pharmacological pain relief or because of failure to progress in the first stage (32.8%, n=297).

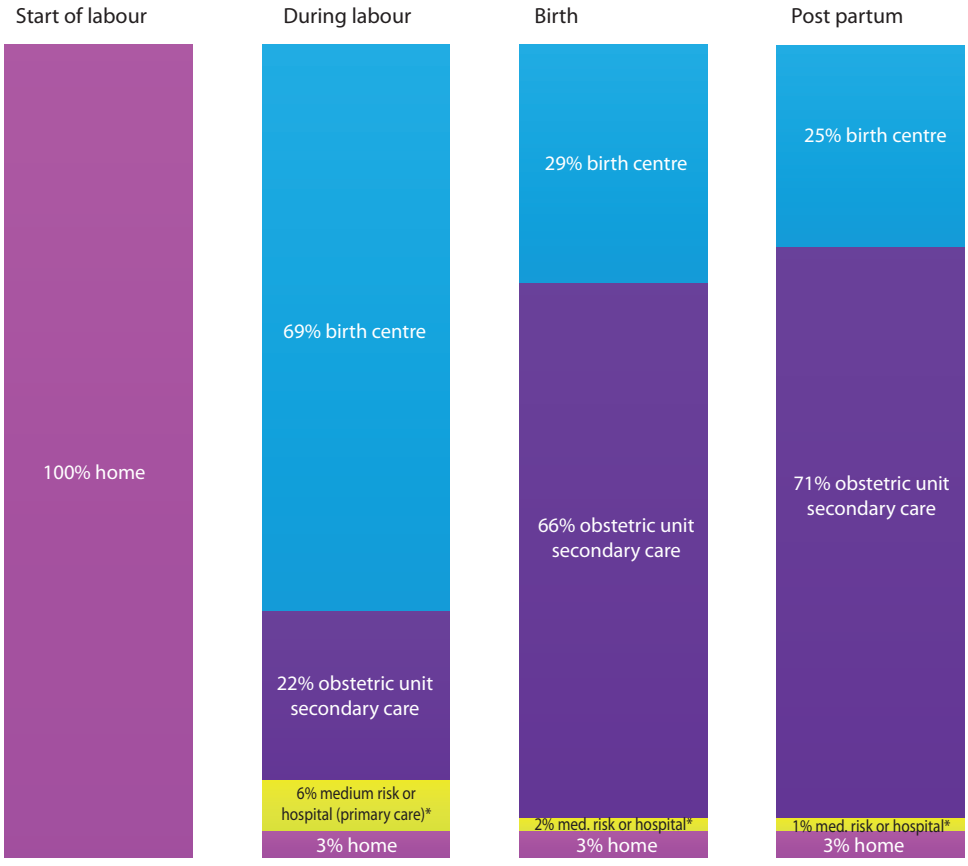

Figure 1 • Location during the different stages of childbirth, for nulliparous women who planned to give birth in a birth centre (n=906)

* = birth under responsibility of a community midwife

Table 1 • Place of from where referral took place and reason for referral for nulliparous women who planned to give birth in a birth centre (n=906)

	Referred from home (n)	Referred from the birth centre	Referred from hospital	TOTAL n=906(100%)
Referred during first or second stage	**204**	**354**	**37**	**595 (65.7%)**
Failure to progress in first stage or request for pharmacological pain relief	97	180	20	297 (32.8%)
Meconium-stained amniotic fluid	48	60	7	115 (12.7%)
PROM > 24u	39	5	2	46 (5.1%)
Failure to progress second stage	5	79	4	88 (9.7%)
Fetal distress	1	25	2	28 (3.1%)
other	14	5	2	21 (2.3%)
Referred during third or fourth stage	3	45	1	49 (5.4%)
Hemorraghia post partum	1	15	0	16 (2.1%)
Complicated rupture	1	20	0	21 (2.3%)
Retentio placentae	1	10	1	12 (1.3%)
Total of referred women	207	399	38	644 (71.1%)
Total of non-referred women				262 (28.9%)

To determine the relationship between a VE carried out at home and outcomes after arrival in the birth centre, only data of those women who actually had been present in a birth centre were used (69%). After exclusion of women with missing data on the first VE (2.1%, n=19), the data of 600 women were analyzed. Before transfer to the birth centre, 73.8% (n=443) of the women were given a VE (at home). Mean cervical dilation at the last VE at home was 4.5 cm (figure 2). The women who were not vaginally examined at home prior to transfer, had a mean cervical dilation of 3.9 cm at the first VE in the birth centre.

The group of women who were not vaginally examined at home prior to transfer (26.1%, n=157) had a non-significant higher chance of being transferred to secondary care compared to the women who were given a VE at home (68.8% vs 61.2%, p=0.090, 95% CI 0.49 – 1.05).

Discussion

This small sub-study is the first investigation that enables some insight into the process of transfers during labour for nulliparous women who plan to give birth in a birth centre. Almost 29% of women gave birth at their chosen location. During labour 66% of women were transferred to secondary care. The main reason for transfer to secondary care was failure to progress in the first stage of labour or a request for pharmacological pain relief

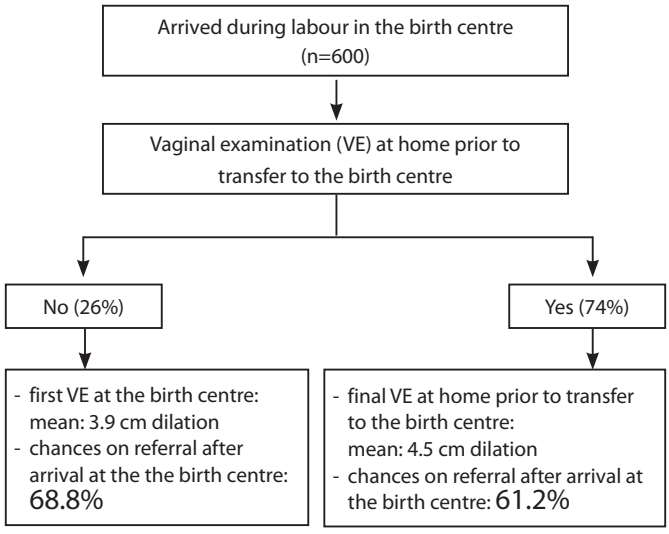

Figure 2 • Outcomes for nulliparous women who planned to give birth in a birth centre (n=906) and actual arrived in the birth centre during birth (n=600)

(32.8%). Women who were given a VE at home prior to transfer to the birth centre, had a smaller non-significant chance of being transferred from the birth centre to secondary care in the hospital during labour or the postpartum period.

Most birth centres present data about the number of women being transferred from the birth centre. These data only give information about those women who spent actual time in the birth centre. Our sub-study shows that more than 30% of nulliparous women who plan to give birth in a birth centre, never visit this location during labour. These women are transferred to medium or secondary care before ever reaching a birth centre or they choose a different place of birth during labour. This means that this group of women is never seen in the data of birth centres which may lead to different results than those presented in existing research into the effect of the planned place of birth [8–12]. Most of these studies analyse participants according to the intention-to-treat principle to enable an accurate comparison between birth places. Although at present it is not possible to carry out these analyses with the available Dutch Perined data, it should become a regular feature of the Dutch perinatal data base in the future [13].

The data used in this study are part of a larger study called the Dutch Birth Centre study [4]. A secondary analysis was carried out on prospectively collected data. This may mean that not having had a VE at home prior to transfer does not necessarily equal not having had a home visit prior transfer to the birth centre. We assume that this difference is negligible. This sub-study has its limitations due to the small number of data included

and is therefore only an exploration. The study does show that the effect of the moment at which a woman is transferred, should be investigated further.

On average nulliparous women who have had a VE at home are transferred at a later stage during labour when compared to women who did not have a VE prior to transfer in labour. These results are comparable to international trials which investigated the effect of a home visit versus triage by telephone on the progress in labour measured by cervical dilation [14,15]. A Cochrane review investigating the effects of labour assessment programs, found that women in labour assessment programs, which aim to delay hospital admission until active labour, experienced less interventions during labour [16]. The review indicated that a larger RCT was required in order to confirm these conclusions. International cohort studies which compare the mean cervical dilation in centimeters on arrival on the labour ward to outcomes such as the risk of interventions and the chance of a vaginal birth, suggest better outcomes for women who are not admitted to the labour ward until they are at least 4 cm dilated [17–21].

A home visit during labour is also associated with a more positive birth experience compared to women who were only given support by telephone during this labour phase [22]. Three quarters of the women in our study experienced a VE at home prior to transfer. We did not investigate the reasons behind the decision to carry out a VE at home or not. Possibly practice management, the vision of the birth centre or the woman's wishes may have influenced this decision. It is important to gain insight into the reasons why not all nulliparous women had a VE at home prior to transfer to the planned birth location and the possible effect of this VE on the birth process. The guideline of the Dutch midwives organization (KNOV) does not give any guidance on where the first contact in labour should take place [2]. We believe this should be at home, especially for nulliparous women.

A home visit during labour ensures adequate reflexion on the most appropriate moment of transfer to the planned birth location for each individual woman thereby truly putting her at the centre of care. Apart from informing women on the advantages and disadvantages of the available birth locations, they need to be informed about the reasons behind the moment of transfer. A home visit during labour should be part of the standard of care for all nulliparous women.

Conclusion

A considerable group of women who plan to give birth in a birth centre never arrive at the planned location. Nulliparous women who have a VE at home prior to transfer to

the birth centre, possibly have a smaller risk of needing a transfer to secondary care. Moreover performing a VE at home enables the midwife to give early support in labour.

Further research is needed into the effect of a home visit prior to transfer to the planned birth location on the experience of labour, the moment of transfer and outcomes such as the percentage of referrals.

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