Chapter 3

Haemorrhage after home birth: audit of decision making and referral

Part 2: results and discussion

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SUMMARY

This descriptive study aims to identify substandard care (SSC) in PPH after home birth in the Netherlands. Sixty seven cases of postpartum haemorrhage (PPH) reported by community-based midwives were collected. After applying selection criteria, seven cases were submitted to audit. The audit panel consisted of 12 midwives (of whom seven contributed a case), 10 obstetricians, an educational expert and an ambulance paramedic. First, an individual assessment was performed by all members. Subsequently, at a plenary audit meeting, SSC factors were determined and assigned incidental, minor or major status. Major SSC was identified in two out of seven cases. We conclude that communication between different healthcare providers should be optimised and a proactive attitude taken to select women who plan to give birth at home, taking into account the possibility of timely referral in case of PPH or retained placenta. National multidisciplinary guidelines on managing obstetric haemorrhage in home birth are urgently needed.

RESULTS

Of all community-based midwives (n=366) who registered for the postgraduate training programme developed for Dutch community-based midwives, 337 (92.1%) agreed to participate in the study.
From April 2008 to April 2009, 67 midwives reported cases of PPH. Seven of these births took place in hospital, supervised by the community-based midwife because of retained placenta or PPH after a previous pregnancy. Fourteen (20.9%) women chose to give birth in hospital supervised by the community-based midwife. Finally, two (3.0%) unplanned home births were reported: one birth was a very fast preterm birth (34+2 weeks), where transfer to hospital was not possible before birth. The second birth was planned in hospital because of retained placenta in a previous pregnancy, but labour was progressed too far for timely transfer. Of the 44 planned homebirths, 28 (63%) cases fulfilled the criteria and thus were eligible for audit; in two cases there was no referral to hospital and, despite active follow up of missing data, 16 (36%) cases were still incomplete when inclusion for audit started. After consultation with audit specialists, a maximum of eight cases per audit session were judged to be feasible. Of the remaining 28 cases, 10 were randomly selected. All 10 community-based midwives were invited to participate in the audit and eight accepted the invitation. Two midwives declined the invitation because of holidays or other obligations. A copy of the eight cases was sent by mail to all audit participants and subsequently assessed. One member who contributed a case had to cancel her participation on the day of the audit because of illness; therefore seven cases were finally discussed during the plenary audit.

Individual audit

Results of the individual audit can be seen in Table 1. Out of total SSC factors (5,367), the panel members scored 842 (16.7%). Most SSC factors were contributed to the healthcare system (52.9%) and the midwife (35.3%).
In all seven cases, SSC was found on one or more items ranging from one to eight factors. In two cases (29%), the panel judged that there was a delay in recognition of the signs and symptoms by the community-based midwife and referral to the obstetrician. In four cases (57%), no intravenous access was established by the community-based midwife. In two cases (29%), there was no – or too late - bladder catheterisation. In one case (14%), the panel found that homebirth had influenced outcome. Oxytocin was not or insufficiently applied in three of seven cases (43%) when PPH occurred. No oxygen was administered in five cases (71%).

Plenary audit

Substandard care was found in all cases. In six cases (85%), consensus was reached on the level of SSC. In three cases (43%) minor SSC was diagnosed, in two cases (29%) major SSC and incidental SSC in one case (14%). Specific recommendations were made concerning the management of PPH, communication, cooperation and place of birth (see Table 2).

DISCUSSION

This is the first study assessing SCC factors on PPH after homebirth in an industrialised country. In two cases (29%), the majority of the panel found major SSC; different care would definitely have given a better outcome. Recommendations were formulated concerning communication and anticipation.

Documentation

Preliminary to the audit, 16 cases (24%) were excluded because of incomplete documentation, despite the efforts of the researchers. In 12 cases, the midwives were unable to recall the case, such as name and birth date of the woman in order to collect data and complete the case. In two cases, the midwife had changed jobs and was not able to easily access the data in order to supply the researchers with sufficient data for audit. The excluded cases were all cases of marginal PPH, up to 1100ml. This finding emphasises the importance of documentation. Cooperation between community-based midwives and obstetricians, also through documentation, could be improved substantially.

Decision-making and anticipation

Transfer

In two cases (29%), the panel judged there to have been a delay in referral to the obstetrician. In home birth, the community-based midwife must make swift decisions in order to adequately stabilise and refer the mother as soon as possible. As for all urgent referrals in the Netherlands, an ambulance should reach the patient within 15 minutes of the emergency call. From emergency call to actual admission in hospital, no more than 45 minutes should pass. [1] Within this time frame, the patient must be stabilised and transported to hospital. In 92% of all urgent referrals, transport is actually commenced within 15 minutes. [2]

Intravenous access

In cases of excessive bleeding, priority should be given to an intravenous line. [3] This was not started in four of seven cases (57%) by the community-based midwife, despite their attendance at a recent postgraduate training course. Our study shows that although the skill is mastered by those who attend the course, actual implementation of this skill is not yet optimised.

Retained placenta

The panel advised that if the placenta is not born after 30 minutes, preparations should be made for transport such as calling an ambulance for emergency transport, attempt for intravenous access and consulting an obstetrician. In the Netherlands, historically, women with retained placenta after home birth are referred to hospital one hour after birth in the absence of severe blood loss (>1000ml). This time frame is not determined in any guideline in the Netherlands. It is shown that 90% of placentas are born within 15 minutes. [4] In the Netherlands active management including routine oxytocin post childbirth is not routinely applied. [5] The international Confederation of Midwives (ICM) and the International Federation of Gynaecologists and Obstetricians (FIGO) advocate active management of the third stage of labour in all women in the home birth setting. [6] However, a recent review shows no conclusive evidence on whether an active management in a low risk setting leads to a reduction in the prevalence of PPH. [7] As far as we know, optimal management of the third trimester in case of home birth has not been subjected to study yet. Further prospective studies in the low risk (home birth) setting are necessary to investigate whether active management will result in improved outcomes. [8]

Proactive

Being proactive means that one should always be prepared for emergency transfer. A structured approach gives the handler guidance in these, often stressful, situations. After accessing ABCD (airway, breathing, circulation and disability), the 'E' (environment) needs attention, especially in an outer hospital setting. [3] The panel advised that before proceeding to birth at home, the community-based midwife should look critically at whether the setting is adequate. In home birth, anticipation of possible ambulance transport is necessary. Therefore, the panel advised the midwife to make sure that birth takes place in an easy and timely accessible place for (all) caregivers. In many regions in the Netherlands, community-based midwives require basic arrangements under which women can give birth at home. The panel advises that, if in doubt of a safe setting, this should be actively discussed between the woman and care provider to achieve the optimal birth setting. Anticipation is the key word for optimal and safe

home birth. The presence of ambulance paramedics during the audit has been shown to be a positive complement. Background information on the logistical processes is of great value because this forms an important part of the decision to refer to secondary care. Optimal cooperation and communication are of vital importance within the care chain organisation, so we recommend the presence of all disciplines involved, such as ambulance personnel, anaesthetists, nurses and emergency doctors in audit when referral is evaluated.

Oxygen

Although advised within the course, oxygen was not administered in five cases (71%). Further research is needed into the feasibility and implementation of this measure. In this audit, major SSC was found in two of seven cases (29%). A guideline on the prevention and management of PPH for community midwifery care is urgently needed in the Netherlands. Repetitive teaching of management skills in PPH can be of great value for the community-based midwife, who often has to manage an obstetric problem with little help. This should be part of the standard education of midwives. Currently, quality indicators are developed for prevention and management of PPH in low-risk births by the authors. In addition to audit these indicators will supply us with a tool to assess care in a broader perspective.

Key conclusions

Audit of PPH after home birth is possible and major SSC was identified in two of the seven cases. Communication between different healthcare providers should be optimised and a proactive attitude taken to select women who plan to give birth at home, taking into account the possibility of timely referral in case of PPH or retained placenta. Adequate intravenous access in case of PPH should be regularly taught and promoted. National multidisciplinary guidelines on managing obstetric haemorrhage in home birth are urgently needed.

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Table 1 Substandard care scoring items as used in the audit form and their contribution concerning general care and specific management of PPH after the individual audit.

General care scoring items	n	%
Patient	**23**	**7.5**
Patient delay consulting doctor/midwife	13	4.2
Refusal of medical help or advice	10	3.3
Midwife	**108**	**35.3**
Inadequate risk selection	25	8.2
Inadequate antenatal care	12	3.9
Delay in recognition of symptoms/signs	27	8.8
Delay in referral to obstetrician	44	14.3
Obstetrician	**13**	**4.2**
Inadequate risk selection	3	0.9
Delay in recognition of symptoms/signs	2	0.7
Delay in treatment after diagnosis	8	2.6
Healthcare system	**162**	**52.9**
Homebirth influenced outcome	60	19.6
Medical assistance arranged too late	44	14.3
Quality of transport influenced outcome	32	10.4
Ambulance was not present within acceptable time	26	8.5
Total	**306**	**100**

Specific management of PPH scoring items	n	%
Oxytocin was not administered according to guidelines	56	10.5
No uterine massage was administered	17	3.2
Inadequate maternal monitoring (pulse, blood pressure)	52	9.7
No oxygen was administered by midwife	91	17
No oxygen was administered by gynaecologist	42	7.8
None or too late bladder catheterisation	44	8.2
Inadequate stabilisation of patient for transport	15	2.8
No intravenous line was started by midwife/GP	87	16.2
Intravenous line was started too late overall	45	8.4
No volume replacement was started by midwife	46	8.6
Suboptimal treatment of PPH according to guidelines	41	7.6
Total	**536**	**100**

Table 2 Recommendations following discussion at the plenary audit meeting

Audit	Recommendations
General	Not all medical records were available for audit; in two cases discharge letters of the secondary care facility were missing or incomplete, despite inquiry by the midwife and/or researcher. The panel recommended all disciplines of professionals to pay extra attention to their written communication.
Primary care PPH	Start intravenous access by community-based midwife when blood loss is more than 500ml and not ceasing. Administer oxygen to the woman when PPH occurs. Reduce delay by timely referral; start organising referral if placenta is not delivered within 30 minutes of birth, regardless of the amount of blood loss at that time.
Transfer and place of birth	Discussion about the physical transfer of the patient, such as road block and > ground floor birth; women should give birth on ground floor if no elevator is present. Midwives should regularly (re)assess place of birth. Care giver could call for early ambulance back up if home birth is far from hospital.
Communication and co-operation	In case of care by different care givers, make a clear statement of the primary responsible care giver. Communication between community-based midwives and obstetricians should be optimised: confusion on practical matters concerning referral (such as which entrance to enter the hospital) might lead to SSC. Clearer communication between community midwife and obstetrician regarding clinical condition of the mother (pulse and blood pressure).

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