Planned Home Births in Ireland

ANNUAL REPORT 2017

NATIONAL PERINATAL EPIDEMIOLOGY CENTRE

Office of the Nursing & Midwifery Services Director

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Tús Áite do Shábháilteacht Othar
Patient Safety First

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Acknowledgements

This is the 6th publication of a Planned Home Birth Annual Report. At all times the HSE Home birth service aims to deliver safe, quality care to normal risk eligible women and their families. This 2017 report is an invaluable resource for all key stakeholders. The National Maternity Strategy (2016) 'Creating a Better Future Together' acknowledged that demand for homebirth exists and this need is reflective in this report with 183 women planning a home birth in 2017. It is recommended in the strategy that homebirth services integrated within the maternity network are available in the supported care pathway and we look forward to further progress in the integration of the service which is also in line with the HSE National Slaintecare Strategy.

I wish to acknowledge the work of Ms Mary Wynne former Director of ONMSD and Sheila Sugrue former National Lead for Midwifery ONMSD (both retired in 2019) for all their leadership, advocacy and support for homebirths in Ireland throughout the years. The Designated Midwifery Officers monitor the provision of the homebirth service as per the HSE Home Birth Service agreement under the governance of community operations and their continued professional, hardworking and dedicated commitment to improving the service is very much appreciated. Sincere thank you to all the self-employed community midwives (SECMs) who daily dedicate themselves to providing choice and access for women to have the continuity of care and carer in their pregnancies and births.

We look forward to continued progress in the homebirth services in Ireland with the aim of excellent experience of individual users as well as excellent health outcomes for both mother and baby.

David Walsh National Director
Community Operations HSE

Welcome to the Planned Home Births Annual Report 2017 from the Office of Nursing and Midwifery Services Director, Health Service Executive (HSE) in collaboration with the National Perinatal Epidemiology Centre (NPEC). This is the 6th publication of a Planned Home Birth Annual Report.

At the NPEC we endeavour to provide Irish maternity services with a facility to undertake in-depth reviews of its own medical practices, through monitoring outcomes and regular audit. As such it is not only valuable that the HSE is auditing these data but essential to ensure that standards of home birth in Ireland are met. It is intended that results of these clinical audits will be reported in successive annual reports into the future.

Support from The Office of Nursing and Midwifery Services Director, the Designated Midwife Officers and the Self Employed Community Midwives has been crucial in order to ensure that the data from this audit can provide a transparent account of the national home birth service, as provided by the SECMs on behalf of the HSE. I extend my sincere thanks and appreciation to the many midwives who have supported and contributed data to the NPEC. Their work is greatly acknowledged.

I sincerely thank all my colleagues in the maternity services in Ireland who continue to engage with the NPEC and produce data of which we are proud. We must now ensure that we turn that data into information, and then intelligence, to ensure the maternity services in Ireland continue to grow and lead in audit and change-management initiatives.

Lastly, I would like to thank the staff of the NPEC for their hard work and dedication to the mission of the Centre. Assessing the outcomes of maternity care provided, learning from the data and working together, we have great potential to improve the care of mothers and babies in Ireland.

Richard A Greene, Director, NPEC
National Perinatal Epidemiology Centre

Recommendations

The home birth service provides care to low risk healthy women. Over the course of her pregnancy a woman may need to be transferred to the nearest maternity unit/hospital to receive more specialised and/or complex care. Presently, women must book with a maternity unit/hospital to allow a Self Employed Community Midwife (SECM) to refer women if such a need arises. The identification of a liaison consultant obstetrician in each maternity unit would further assist in the effective transfer of women to and from the home birth service, as required.

Following transfer, a structured notification system between the maternity unit and the SECM responsible for the woman's care should be developed to improve communication between services.

All pregnant women should have an accurate weight, height and BMI measured and documented in the midwifery notes both at their first antenatal visit and during the last trimester in order to ascertain the impact of maternal weight on perinatal outcomes in Ireland.

A second SECM was contacted when a woman began labouring at home. Yet, the proportion of women who have a second SECM in attendance at the home birth varies throughout the country. Further investigation exploring factors impacting on the attendance of a second SECM at a homebirth is warranted.

Development of a national tool-kit for SECM to assist in the estimation of blood loss should be considered. A quantitative approach involving volume and weight assessment to estimate blood loss should be considered. Such an approach would allow for standardisation across the maternity services.

It is of importance that the home birth service provides care that is in line with evidence-based care guidelines. All Designated Midwifery Officers should continue to collect and submit anonymised data on home births to inform this national clinical audit. In doing so, this will assist in ensuring that the necessary patient safety assurances are provided with consistency across each region in the country

Executive Summary

This is the sixth national clinical audit on planned home births in Ireland under the care of Self Employed Community Midwives (SECMs). In 2017, 20 primary SECMs provided a home birth service on behalf of the Health Service Executive (HSE). Anonymised data were reported by the five Designated Midwifery Officers on a total of 183 planned home births in 2017. This equates to a 5% reduction in the number of women who intended on having a home birth compared to figures from 2016.

Of the women who intended on having a home birth, all but four women registered during pregnancy with their general practitioner. There were 30 recorded incidences where general practitioners refused to provide shared care. All women registered with their local maternity unit. Over half of all planned home births were arranged through the Health Service Executive (HSE) South home birth service (59%).

Almost three-quarters of the women who intended on having a home birth had a previous birth (70%). Women intent on a home birth had an older age profile to all mothers who gave birth in the country with 86% aged 30-39 years versus 64% for all women giving birth. Body mass index (BMI) was reported for 79% of mothers who planned to have a home birth. Of the women with data, two-thirds were in the healthy range (57%), 35% were overweight, and 7% were obese.

Smoking prevalence is unknown for the pregnant population in Ireland. In UK countries, 12-19% of pregnant women smoke throughout their pregnancy. Data reported for this clinical audit also indicated that one of the six mothers who smoked (17%) stopped smoking during pregnancy. Therefore just five women (3%) with a planned home birth in Ireland smoked throughout their pregnancy in 2017. Regarding alcohol, the vast majority (88%) of the home birth pregnant women did not consume alcohol during pregnancy. As smoking and alcohol consumption are a risk factor for a range of adverse perinatal outcomes, it is encouraging to continue to see a lower rates of such behaviours in this population.

Of the women who intended on having a home birth, all bar two women had an antenatal ultrasound scan. Twice as many women had their antenatal ultrasound scan at 20 weeks gestation or later in 2017 compared to women who intended on having a home birth in 2016 (11% versus 5%). There was a reduction in the number of women who were referred to the maternity hospital during the antenatal period in 2017 compared to 2016 (20% versus 33%).

Similar to previous years, nulliparous women were more likely to transfer in the antenatal period compared to parous women (25% versus 18%). Of all the mothers who transferred during the antenatal period, 19% were transferred for induction of labour. Of the women referred to the maternity hospital during the antenatal period, 16% returned to the care of the SECM. This means that there were 31 women who did not return to the care of the SECM as care remained within the maternity hospital system following transfer. Of these 31 women, three-quarters had a spontaneous vertex delivery in the maternity hospital (29%). Nulliparous women were much more likely to have a caesarean section delivery than parous women (75% versus 16%).

Of the 152 mothers who began labouring at home, 14% were transferred to a maternity hospital. Nulliparous women were five times as likely to transfer during labour as parous women (34% versus 7%). Over three-quarters of intrapartum transfers occurred during the first stage of labour (81%). Failure to progress in labour (33%) and maternal request for analgesia (33%) were the primary reasons associated with transfers during the intra-partum period. One parous woman required transfer during the 3rd stage of labour.

Of the 131 infants born at home 5% needed some form of resuscitation. Four of all infants who were

born at home were transferred to a maternity hospital. One of these four infants were admitted to the neonatal intensive care unit. Three infants born at home in 2017 were not examined by either a General Practitioner or a hospital Paediatrician following birth. Six mothers were transferred to a maternity hospital for postnatal care.

Mothers who birth at home are discharged 14 days after the birth of their infants from the care of the SECM while mothers who deliver in the maternity hospital are generally discharged 3 days after the birth. On the day of the home birth, 97% of mothers were breastfeeding exclusively with 96% breastfeeding exclusively on the day of discharge from the care of the SECM. Mothers who birthed at home were twice as likely to be breastfeeding exclusively on day of discharge compared to all women who gave birth (97% versus 48%).

In summary, this national clinical audit provides information on planned home births in Ireland. This report offers an informative resource for clinicians to inform mothers in a clear and transparent manner in relation to planned home birth as a delivery option in Ireland. Clinical audit by the Home Birth Service in collaboration with the National Perinatal Epidemiology Centre will be on-going to ensure that care provision adheres to the standards and guidelines as included in the selection criteria and as specified in the Memorandum of Understanding and Agreement between the HSE and the SECMs. The National Perinatal Epidemiology Centre in collaboration with the Designated Midwifery Officers continue to develop the audit tool for home births in order for this to be achieved. It is hoped that hospital-based home birth services will also partake in the audit and therefore allow added information about options of care for women during pregnancy and delivery.

Purpose of this report

The primary aim of this report is to present an overview and national statistics on the HSE home births service in the Republic of Ireland for the year 2017. This clinical audit is a national record of planned HSE home births in the Republic of Ireland for 2017. The purpose of the audit is to examine both the maternal and fetal outcomes of planned HSE home births, including outcomes whereby the care of the woman is transferred for hospital care in the antenatal period, during labour or the postnatal period. Consequently, this report aims to provide data to firstly ascertain adherence to the national evidence-based guidelines, protocols and standards and, secondly, to provide evidence which facilitates maternity healthcare providers to review practice in the home setting, where appropriate.

Pathway of care in the Republic of Ireland

As illustrated in Figure 1 when an expectant mother enquires about having a home birth, she can contact a Designated Midwifery Officer (DMO) or the SECM directly. The expectant woman and the SECM discuss the criteria for home births and agree on eligibility for the service. An application form and consent is signed between the SECM and the woman, and then forwarded to the DMO to confirm eligibility, as some women may require an individual assessment by a Consultant Obstetrician. The DMO informs the Director of Public Health Nursing, Local Public Health Nurse, the expectant mothers GP, the Director of Midwifery at the maternity hospital where the mother is booked and the Administration Department of the HSE, Local Health Office (LHO) about the forthcoming home birth. Expectant mothers intending to have a home birth are advised by the SECM to register with a GP and also to register and avail of services with a maternity hospital of their choice. The SECM will be the primary carer for the mother and child up to the age of 14 days.

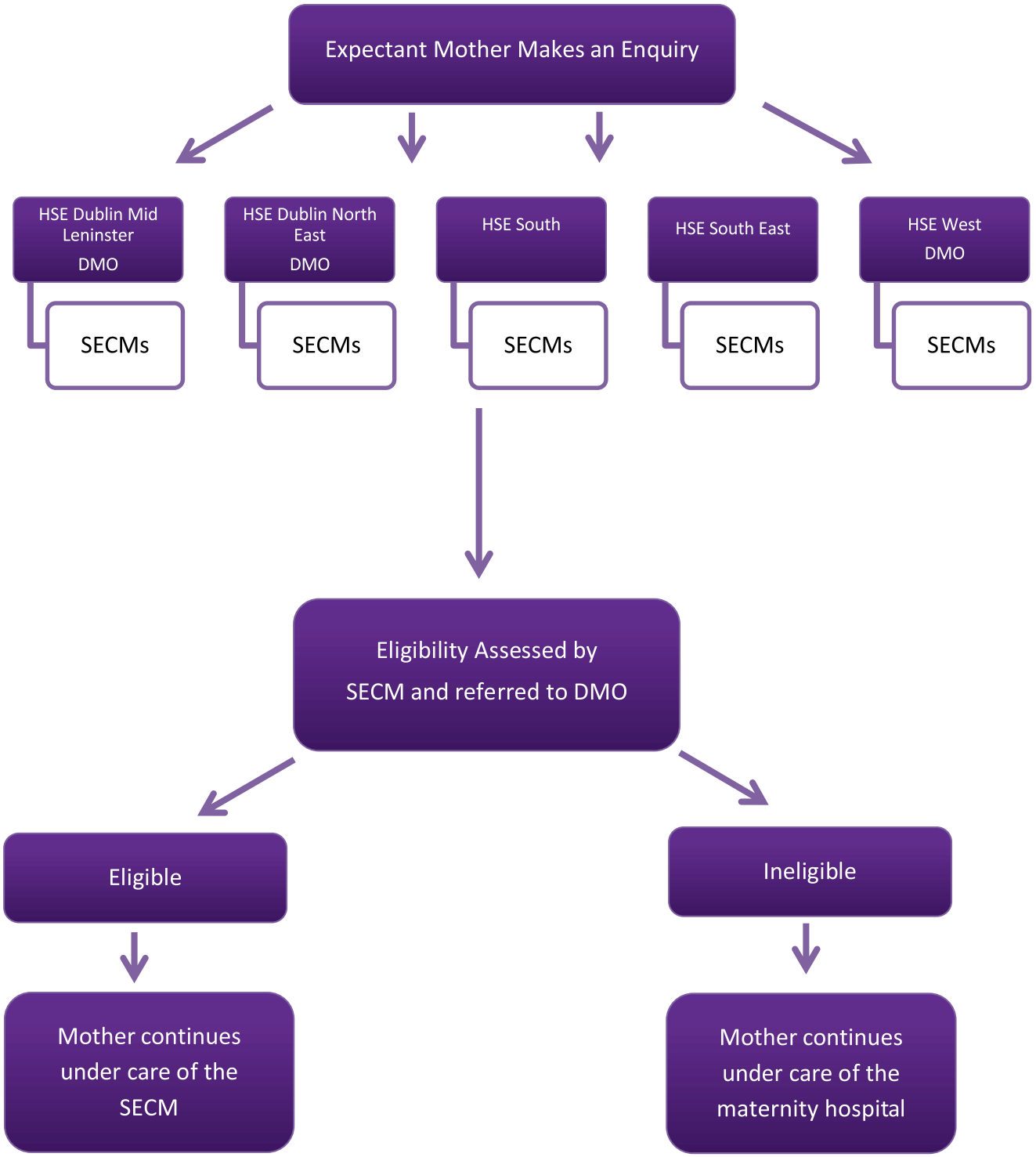

Figure 1: Pathway of care for planned home birth enquiries

Methods

Data recording

In 2017, 20 primary Self Employed Community Midwives (SECMs) in Ireland provided a home birth service on behalf of the Health Service Executive (HSE). As outlined in the Memorandum of Understanding (MOU) between HSE and the SECMs, each SECM is required to partake in clinical audit. Domiciliary midwifery notes of midwifery care are sent by the SECM to the Designated Midwifery Officer (DMO) in the woman's respective HSE area. The DMO reviews the domiciliary midwifery notes, then collates the data using a standardised audit tool and that data are forwarded to the National Perinatal Epidemiology Centre (NPEC) for analysis. Data on all of the women who registered with the HSE home birth service between January 1 and December 31 2017 were collected from all DMOs using a standardised NPEC data collection form. Figure 2 illustrates the flow of information. Each SECM forwards domiciliary midwifery notes to the DMO in the woman's respective HSE area.

Missing data

To ensure accuracy of information, missing or incomplete data were sought from respective SECM and maternity units by the DMO. For analysis purposes, cases with missing data were excluded from calculations. However, the extent of missing data is reported in the results section.

Comparison to national statistics

Comparisons are made with the most recent publications available including the Central Statistics Office's Vital Statistics Fourth Quarter and Yearly Summary report as well as from the Healthcare Pricing Office.

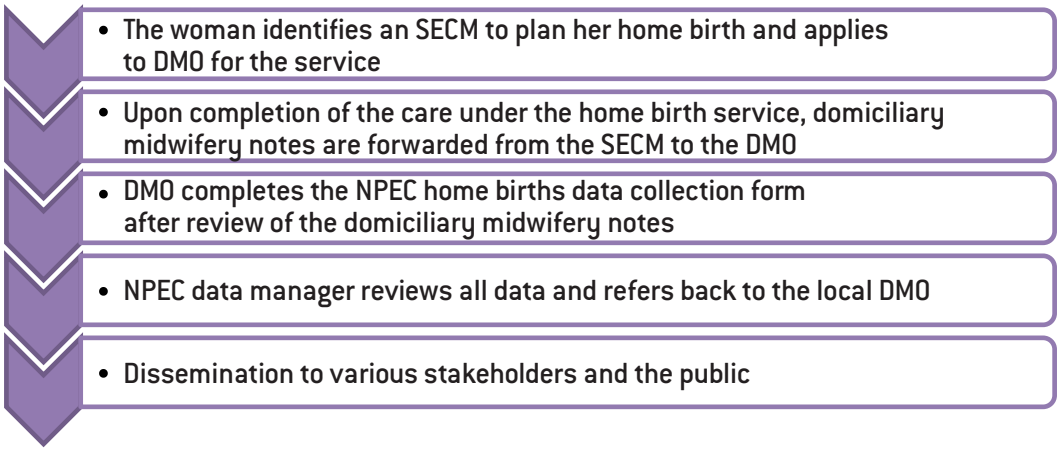

Figure 2: Flow of information in the NPEC data collection process.

Definitions and terminology

Women who are considered low risk, within an agreed criterion, are eligible for HSE home birth services in Ireland. To ensure comparison the DMO and the NPEC used the following definitions which are included in this report:

Exclusion Criteria: Table 1 and Table 2 of the HSE MOU/Agreement for home birth services outline medical and other factors requiring planned birth in an obstetric unit (Appendix B). Table 3 and Table 4 of the HSE MOU/ Agreement for home birth services outline medical and other conditions requiring referral to consultant obstetrician by the midwife for final assessment when planning place of birth.

Antepartum Referrals: Referral to hospital due to complications which have arisen during pregnancy.

Intrapartum Transfer: Hospital transfer during labour. Table 5 of the HSE MOU/Agreement for home birth services outlines indications for intrapartum transfer (Appendix D).

Postpartum Transfer: Hospital transfer following birth. Table 6 of the HSE MOU/ Agreement for home birth services outlines indications for postpartum transfer (Appendix E).

Booking: Data sought by the NPEC Home Births Data Collection Form relate to the time of booking with both the maternity hospital and/or the SECM. For the purposes of this report, booking relates to the mother's first antenatal visit with the Self Employed Community Midwife.

Parity: The number of completed pregnancies, whether live birth or stillbirth, of at least 24 weeks gestation or with a birthweight ≥500g; prior to the home birth in 2017.

Gravida: The number of times the mother has been pregnant, irrespective of duration; prior to the home birth in 2017.

Results

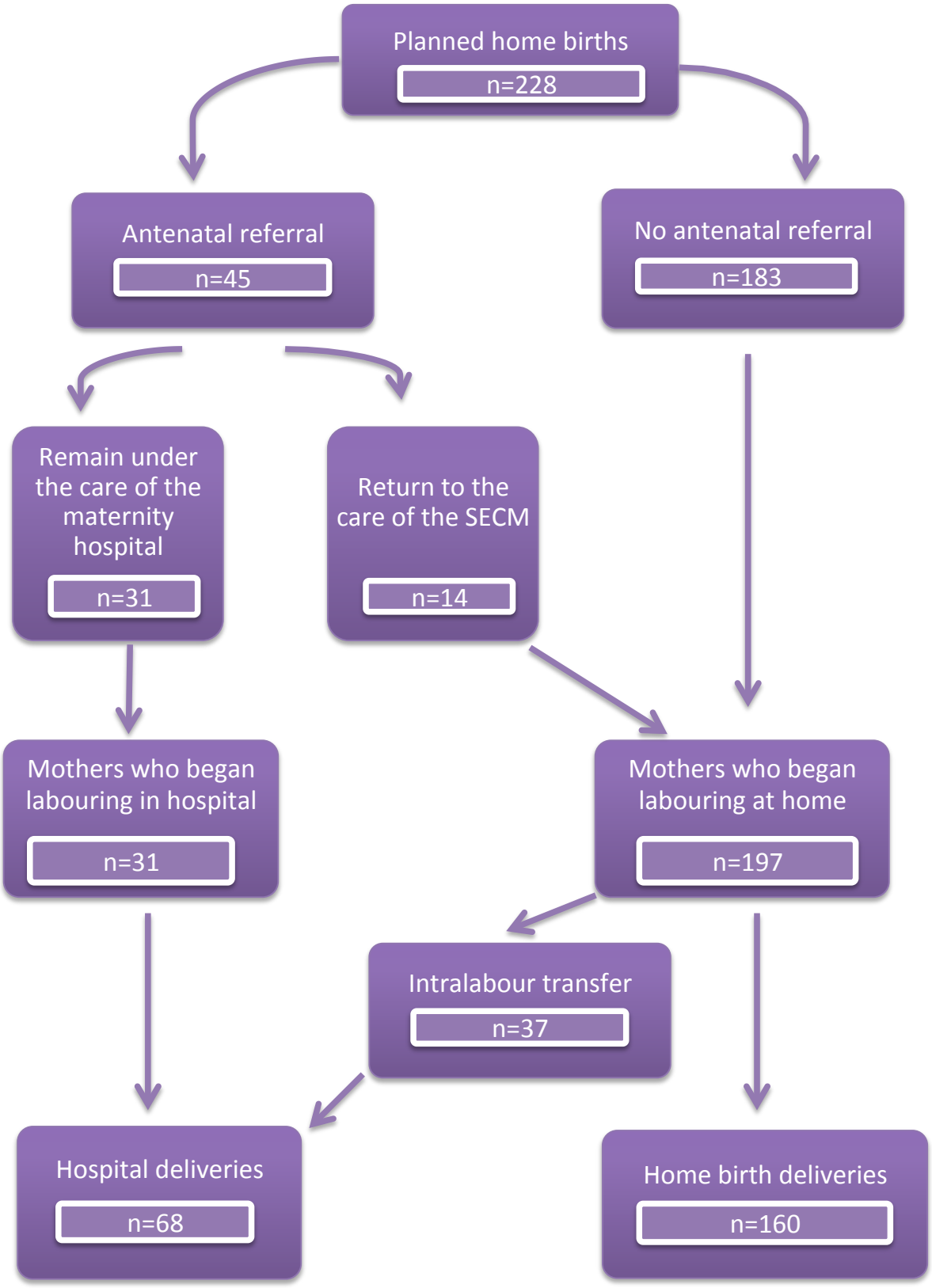

Figure 3: Flowchart of planned home births, 2017

For the period from January 1st to December 31st 2017, there were 183 mothers who intended on having a home birth. This equates to a 4.7% reduction in the number of women who intended on having a home birth in 2016 (n=192). The number of home births were not evenly distributed over the year where the lowest number of births occurred in October (2.7%) and the highest occurred in May (17.3%).

The distribution of home births by Health Service Executive (HSE) region is markedly different to the overall distribution of births. The percentage of home births ranged from 7.7% in HSE South East to 56.3% in HSE South (Table 1). These figures see a reduction in the proportion of home births in HSE West compared to the distribution of home births from 2013 to 2016. The overrepresentation of home births in HSE South persists from previous years.

Table 1: Distribution of mothers intending on having a home birth by HSE area, 2013 -2017

HSE area	Home births (2013) N=258	Home births (2014) N=252	Home births (2015) N=228	Home births (2016) N=192	Home births (2017) N=183
Dublin North East	40(15.5)	38(15.1)	24(10.5)	25(13.0)	31(16.9)
Dublin Mid Leinster	50(19.4)	50(19.8)	29(12.7)	27(14.1)	18(9.8)
West	51(19.8)	44(17.5)	49(21.5)	27(14.1)	17(9.3)
South*	117(45.3)	120(47.6)	126(55.3)	113(58.8)	103(56.3)
South East**	-	-	-	-	14(7.7)

Note: Values are shown as n (%) unless otherwise stated. *One woman registered with the domino scheme in the maternity hospital but all her antenatal and postnatal care was with the SECM **Two women with the hospital home birth scheme.

Maternal Characteristics

Age

The age range of the mothers who booked in for a home birth was 21-41years. Consistent with data from 2016, home birth women tended to be older than all mothers who gave birth in Ireland (Table 2). The majority of women (85.8%) intending to give birth at home were aged 30-39 years compared to 63.6% of all women who gave birth in 2016.

Table 2: Age distribution of mothers intending on having a home birth, 2016 and 2017

Age group	Home births (2016)	Home births (2017*)	All births [1] N=64,093 2016
<20yrs	-	-	1.7%
20-24yrs	6(3.1)	4(2.2)	7.9%
25-29yrs	18(9.4)	14(7.7)	17.3%
30-34yrs	76(39.6)	77(42.3)	35.0%
35-39yrs	77(40.1)	79(43.4)	28.6%
>40yrs	15(7.8)	8(4.4)	6.7%

Note: Values are shown as n (%) unless otherwise stated. *Maternal age unknown for one mother.

Marital status

As outlined in Table 3, consistent with previous years, almost all the women who intended on having a home birth were either married (67.7%; n=124) or with a partner (32.2%; n=45).

Table 3: Marital status of mothers intending on having a home birth, 2016 and 2017

Marital status	Home births (2016)	Home births (2017)
Married	132(68.8)	124(67.7)
Partner	34(17.7)	45(32.2)
Never Married	23(12.0)	11(6.0)
Separated	2(1.0)	0(0)
Divorced	0(0)	0(0)
Widowed	0(0)	0(0)
Unknown	1(0.5)	2(1.1)

Note: Values are shown as n (%) unless otherwise stated.

Ethnicity

The majority of the mothers who booked for a home birth were of white Irish ethnicity which is consistent with the percentage of white Irish who booked for a home birth in 2016 (82.8% versus 76.6%). The proportion of women of white Irish or another white background, who booked for a home birth in 2017, is representative of those in the female population aged 15-49 years in 2016 (Table 4). The numbers of Asian/Asian Irish and Black/Black Irish ethnicities are small but are under representative of the population.

Table 4: Ethnicity of mothers intending on having a home birth, 2016 and 2017

Ethnicity	Home births (2016)	Home births (2017*)	15-49 year old female population 2016
White Irish	147(76.6)	150(82.8)	79.2%
Irish Traveller	0(0)	0(0)	0.7%
Other white background	42(21.9)	26(14.4)	13.7%
Asian/Asian Irish, Black/Black Irish Other/mixed	3(1.5)	5(2.8)	6.3%

Note: Values are shown as n (%) unless otherwise stated. Population data from the National Census 2016.
*Ethnicity unknown for two mothers.

Distance of the mother's residence to services

Data related to the distance of the woman's residence to the SECM and the nearest maternity hospital were available for 173 women. As outlined in Figure 4, half of the women were within 30 kilometres of the SECM (50.8%; n=88). The furthest distance from the woman's residence to the SECM was 79 kilometres. Over half of women were within 30 kilometres of the maternity hospital (60.1%; n=104). The furthest distance from the woman's residence to the maternity hospital was 128 kilometres.

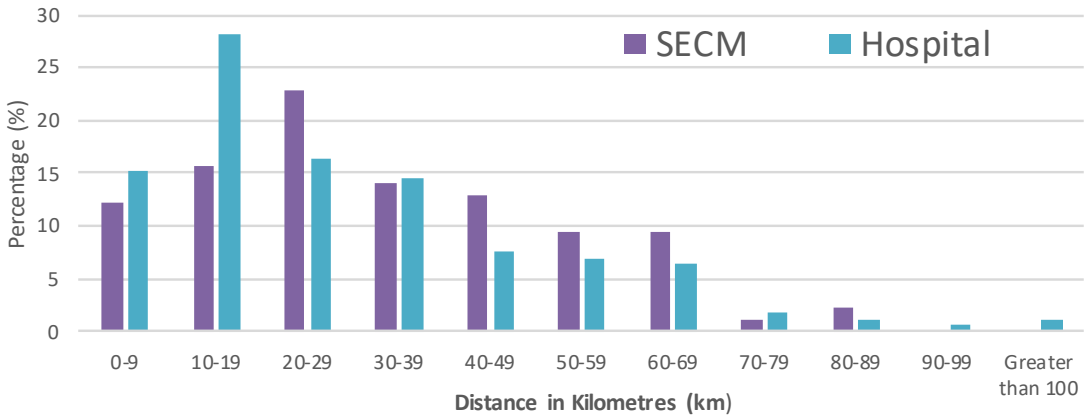

Figure 4: Distance (km) of woman from the SECM and the Maternity Hospital, 2017

Body mass index

Body mass index (BMI) was available for 78.7% (n=144) of women (Table 5). The BMI for over half of women (56.3%; n=81) was in the healthy range (18.5-24.9kgm^{-2}). Over one third (34.7%; n=50) were classified as overweight (25.0-29.9kgm^{-2}) which was similar to that from the general population who participated in the 2017 Healthy Ireland Survey.

Table 5: Body mass index of mothers intending on having a home birth, 2016 and 2017 versus all participants in the Healthy Ireland Survey in 2017

BMI Category (kgm^{-2})	Home births (2016*)	Home births (2017**)	Healthy Ireland Survey 2017 (%)[3]
Underweight (<18.5)	1(1.9)	3(2.1)	2
Healthy (18.5-24.9)	103(65.2)	81(56.3)	36
Overweight (25.0-29.9)	36(22.8)	50(34.7)	39
Obese (>30.0)	16(10.1)	10(6.9)	23

Note: Values are shown as n (%) unless otherwise stated. * BMI unknown for 114 mothers **BMI unknown for 90 mothers

Smoking and alcohol consumption

Smoking status and alcohol consumption of the mothers at their time of booking was recorded for the majority of the 188 women (99.5%%; 182 of 183). Six women (3.3%) were smokers at the time, one of whom gave up during pregnancy. These figures suggest a 16.7% (1 of 6) cessation rate although this estimated rate is based on small numbers. Thus, five of the 182 (2.7%) women smoked throughout their pregnancy. The vast majority of mothers (87.9%; 160 of 182) did not consume alcohol during pregnancy. Of the 22 who drank alcohol during pregnancy, 19 drank alcohol monthly or less.

Previous pregnancy

As indicated in Table 6, almost three-quarters of the women who intended on having a home birth had a previous birth (132 of 188, 72.1%). Table 7 specifies gravida/parity for all 182 women who intended on having a home birth in 2017. A quarter of women (n=48, 26.2%) were never pregnant before (gravida=0). Of the women who had been pregnant (gravida > 0), three quarters (n=99 of 135, 73.3%) had completed pregnancies (gravida = parity, indicated by green shading); 24.4% (n=33 of 135) experienced completed pregnancies but also experienced at least one pregnancy less than 24 weeks gestation and under 500g birthweight (gravida > parity > 0, indicated by orange shading) and 2.3% (n=3 of 135, 2.2%) experienced pregnancies which resulted in miscarriages i.e. their previous pregnancies never exceeded 24 weeks gestation or 500g birthweight (gravida > parity = 0, indicated by red shading).

Table 6: Distribution of parity of mothers intending on having a home birth, 2017

Parity	Home births (2017)	All Births 2016 N=64,093
Nulliparous	51(27.9)	24,452(38.2)
Parous	132(72.1)	39,641(61.8)

Note: Values are shown as n (%) unless otherwise stated.

Table 7: Gravida/parity of mothers prior to pregnancy in 2017

Gravida \ Parity	0	1	2	3	4	5	Total
0	48						48
1	2	57					59
2	1	8	25				34
3	0	4	5	13	6		28
4	0	0	5	4	2		11
5	0	0	0	0	0	2	2
6	0	0	0	0	1	0	1
Total	51	69	35	17	9	2	183

Note: We refer to gravida and parity prior to the pregnancy in 2017. Green represents women with previous pregnancies that were always complete; orange represents women who had experienced complete pregnancy and pregnancy <24 weeks gestation and birthweight<500g; and red represents women whose previous pregnancies were always <24 weeks gestation and birthweight<500g

Obstetric and medical conditions

All women intending who intended on having a home birth registered with a maternity unit. All but four women registered during pregnancy with their general practitioner. There are 30 recorded incidences where general practitioners refused to provide shared care (16.4%).

Of the 135 women who had a previous pregnancy, six (4.4%) were reported to have had a previous medical or obstetric problems as outlined in Appendix B which included history of depression, Group B Streptococcus, laparoscopy, pre-term labour, history of depression and gestational diabetes mellitus. For the woman who availed of the Cork University Maternity Hospital domino scheme via the home birth service, there was a history of post-partum haemorrhage with retained placenta.

Of the 183 women who intended on having a home birth, 36 mothers (19.8 %) were reported to have a medical or an obstetric problem as outlined in Appendix B and or Appendix C (Table 8 & 9). All of the 36 women were reviewed by a consultant obstetrician in a maternity unit.

Table 8: Medical conditions and other factors requiring planned birth in an obstetric unit

	N=6
Preterm labour	1
Gestational diabetes	1
Group B Streptococcus	1
Psychiatric care and support in a previous pregnancy	1
Laparoscopy for endometriosis	1
Retained placenta in a previous pregnancy	1
Post-partum haemorrhage in a previous pregnancy	1

Note: Factors are not mutually exclusive and therefore percentages add up to over 100%

Table 9: Medical conditions and other factors requiring referral to consultant obstetrician by the midwife for final assessment when planning place of birth

	N=30
Age over 40 at booking	4(13.3)
History of a large loop excision of the transformation zone procedure	7(23.3)
Hypothyroidism	5(16.6)
History of previous baby more than 4.5kgs	3(10.0)
Uterine fibroid	1(3.3)
Grand multiparous	1(3.3)
History of retained placenta	1(3.3)
History of extensive vaginal, cervical or third-degree or fourth-degree perineal trauma	3(10.0)
Body mass index at booking of >35	1(3.3)
Low lying placenta	1(3.3)
History of Group B Streptococcus	1(3.3)
History of gestational diabetes	2(6.6)
Fractured pelvis as a child	1(3.3)
GTT positive	1(3.3)

Note: Factors are not mutually exclusive and therefore percentages add up to over 100%

Planning for the delivery

Of the 183 women who intended on having a home birth, 181 (98.9%) had an antenatal ultrasound scan. Estimated date of delivery (EDD) was calculated using ultrasound scan in the majority of cases (72.4%; n=131). For the remainder of the women, EDD was calculated using both date of last menstrual period (LMP) and scan (22.1%; n=40) or LMP only (6.1%; n=11). Gestation was recorded for 179 of the 181 women who had an antenatal ultrasound scan. One-fifth of women had an antenatal ultrasound scan at 12 weeks gestation or earlier (18.4%; n=33) and almost three-quarters of the women had a scan between 12 and 19 weeks gestation (70.9%; n=127). Twice as many women had their antenatal ultrasound scan at 20 weeks gestation or later in 2017 compared to women who intended on having a home birth in 2016 (Table 10).

Table 10: Weeks gestation at antenatal ultrasound scan, 2016 and 2017

Gestation	Home births (2016*)	Home births (2017*)
Less than 12 Weeks	61(32.6)	33(18.4)
12-19 Weeks	116(62.0)	127(70.9)
20 Weeks or Later	10(5.3)	19(10.7)

Note: Values are shown as n (%) unless otherwise stated. * Gestation at scan unknown for 2 mothers.

The number of antepartum visits by the midwives to women intended on having a home birth ranged from one to 14 visits. The mean number of visits to the women was six. As indicated in Table 11, the majority of attendances by the midwife for both nulliparous and parous women were between four and nine (86.3% and 90.1%).

Table 11: Number of antenatal visits to the SECM, 2017

	Nulliparous (n=51)	Parous (n=131*)
Up to 3 visits	0(0)	5(3.8)
4-6 visits	34(66.7)	76(58.0)
7-9 visits	10(19.6)	42(32.1)
10-12 visits	5(9.8)	8(6.1)
13-15 visits	2(3.9)	0(0)

Note: Values are shown as n (%) unless otherwise stated. *Number of antenatal visits unknown for 1 mother.

Antenatal referrals

Of the 183 women intending to have a home birth, 37 (20.2%) were referred to a maternity hospital due to complications arising during the antenatal period. Nulliparous were more likely to be referred to the maternity hospital in the antenatal period than parous women (25.5% versus 18.2%; Table 12).

Table 12: Antenatal referral by parity, 2017

	Nulliparous (n=51)	Parous (n=132)
No antenatal referral	38(74.5)	108(81.8)
Antenatal referral	13(25.5)	24(18.2)

Note: Values are shown as n (%) unless otherwise stated.

Table 13: Reasons for antepartum transfer, 2017

	Nulliparous (n=13)	Parous (n=24)
Breech presentation	2(15.4)	3(12.5)
Induction of labour	5(38.5)	2(8.3)
Reduced fetal movements	1(7.7)	2(8.3)
Developed antibodies at 38 weeks gestation	0(0)	1(4.2)
Visual disturbances	1(7.7)	0(0)
Post maturity	5(35.5)	0(0)
Group B Streptococcus infection	0(0)	7(29.2)
Small for gestational age	1(7.7)	0(0)
Unstable lie	1(7.7)	0(0)
Hypothyroidism requiring a change of treatment	1(7.7)	1(4.2)
Low lying placenta	0(0)	1(4.2)
Hypertension	0(0)	1(4.2)
Polyhydramnios	0(0)	1(4.2)
Onset of gestational diabetes mellitus	0(0)	2(8.3)
Low potassium levels	0(0)	1(4.2)
Bleeding	0(0)	2(8.3)
Abdominal cramps	0(0)	1(4.2)

Note: Factors are not mutually exclusive and therefore percentages add up to over 100%

Of the 37 women referred to the maternity hospital for antenatal care one in six of the women (16.2%; n=6) were returned to the care of the SECM. There were five adverse outcomes identified for women who initially registered with the home birth service and who subsequently transferred to the maternity hospital during antenatal care. It is important to note that additional data related to these adverse events are not collected for this report.

Of the 31 women who were referred to the maternity hospital, and did not return to the care of the SECM, over a third had a caesarean section delivery (38.7%; n=12). Nulliparous women were much more likely to have a caesarean section delivery than parous women (75.0% versus 15.8%; see Table 14). The mode of delivery was unknown for one third of women (33.3%; n=10).

Table 14: Mode of delivery for women with an antenatal transfer and did not return to the care of the SECM, 2017

	Nulliparous (n=12)	Parous (n=19)
Spontaneous Vertex	2(16.7)	7(36.8)
Vaginal Breech	0(0)	0(0)
Ventouse	0(0)	0(0)
Forceps	0(0)	0(0)
Caesarean Section	9(75.0)	3(15.8)
Unknown	1(8.3)	9(47.4)

Note: Values are shown as n (%) unless otherwise stated.

Intrapartum Transfers

Of the 152 women who began labouring at home, 21 (13.8%) were transferred to a maternity hospital during labour. Of these women 42.9% were transferred by ambulance (n=9). It took between 5 and 100 minutes to transfer these women from their homes to the maternity hospital. The mean time it took to transfer women from their home to the maternity hospital was 39 minutes. As demonstrated in Table 15, nulliparous women were 5 times as likely to transfer during labour than parous women (34.2% versus 7.1%).

Table 15: Intrapartum transfer rates by parity, 2017

	Nulliparous (n=38)	Parous (n=114)
Home birth not transferred	25(65.8)	106(92.9)
Intrapartum transfer	13(34.2)	8(7.1)

Note: Values are shown as n (%) unless otherwise stated.

Over three-quarters of intrapartum transfers occurred during the first stage of labour (81.0%; n=17). As outlined in Table 16, one parous woman required transfer during the 3rd stage of labour.

Table 16: Stage of labour when transferred, 2017

	Nulliparous (n=13)	Parous (n=8)
1st Stage	13(100)	4(50.0)
2nd Stage	0(0)	1(12.5)
3rd Stage	0(0)	1(12.5)
Unspecified	0(0)	2(25.0)

Note: Values are shown as n (%) unless otherwise stated.

As indicated in Table 17, almost one third of intrapartum transfers to the maternity unit were associated with failure to progress in labour (33.3% n=7) or a maternal request for analgesia (33.3% n=7).

Table 17: Reasons for intrapartum transfer, 2017

	Nulliparous (n=13)*	Parous (n=8)*
Failure to progress in labour	4(30.8)	3(37.5)
Decelerations in fetal heart rate	0(0)	1(12.5)
Meconium stained liquor	2(15.4)	0(0)
Prolonged rupture of the membranes	1(7.7)	1(12.5)
Maternal request for analgesia	7(53.8)	0(0)
Passing of medium sized clot during labour	0(0)	1(12.5)
No second midwife available	0(0)	1(12.5)
Unspecified	0(0)	2(25.0)

*Not mutually exclusive

As indicated in Table 18, the mode of delivery was unknown for two women who transferred during labour to the maternity unit. Almost two-thirds of women had a spontaneous vaginal delivery (61.9%; n=13).

Table 18: Mode of delivery for women with an intrapartum transfer, 2017

	Nulliparous (n=13)	Parous (n=8)
Spontaneous Vertex	6(46.2)	7(87.5)
Vaginal Breech	1(7.7)	0(0)
Ventouse	0(0)	0(0)
Forceps	3(23.1)	0(0)
Caesarean Section	2(15.4)	0(0)
Unknown	1(7.7)	1(12.5)

Note: Values are shown as n (%) unless otherwise stated.

Medical interventions

Of the 21 women who transferred during labour, 6 (28.6%) had an epidural. No women were reported to have had a blood transfusion. Five adverse incidents were reported for women who had an intrapartum transfer to the maternity hospital. It is important to note that additional data related to these adverse events are not collected for this report. None of the infants who were born in hospital following an intrapartum transfer were admitted to the neonatal unit. Three of the 21 infants who transferred during labour (14.3%) required resuscitation with suction only.

Home birth deliveries

Delivery

The distribution of home births which occurred in the home by HSE region was similar to the distribution of planned home births (Table 19).

Table 19: Distribution of mothers intending on having a home birth by HSE area, 2017

	Planned Home births N=182	Home births N=131
Dublin North East	31(16.9)	20(15.3)
Dublin Mid Leinster	18(9.8)	13(9.9)
West	17(9.3)	11(8.4)
South*	103(56.3)	76(58.0)
South East**	14(7.7)	11(8.4)

Note: Values are shown as n (%) unless otherwise stated. *One woman registered with the domino scheme in the maternity hospital but all her antenatal and postnatal care was with the SECM **Two women with the hospital home birth scheme.

Of the women who birthed at home, rupture of membranes occurred spontaneously in the vast majority of cases (Table 20). Liquor was clear in almost all cases (Table 21). Women who gave birth in the maternity hospital, irrespective of parity, were more likely to have meconium stained liquor.

Table 20: Rupture of membranes, 2017

	Nulliparous		Parous	
	Home	Hospital	Home	Hospital
Spontaneous	25(100)	17(68.0)	103(97.3)	10(38.5)
Artificial	0(0)	2(8.0)	1(0.9)	6(23.1)
Other*	0(0)	4(16.0)	1(0.9)	3(11.5)
Missing	0(0)	2(8.0)	1(0.9)	7(26.9)

Note: Values are shown as n (%) unless otherwise stated. *For births which occurred in the hospital, these refer to pre-labour caesarean sections and in one case during a home birth the infant was born with membranes intact.

Table 21: Liquor colour, 2017

	Nulliparous		Parous	
	Home	Hospital*	Home	Hospital**
Clear	24(96.0)	15(88.2)	100(94.4)	11(91.7)
Meconium	0(0)	1(5.9)	5(4.7)	1(8.3)
Blood stained	1(4.0)	1(5.9)	1(0.9)	0(0)

Note: Values are shown as n (%) unless otherwise stated. *Data missing for nine women. **Data missing for 14 women.

As indicated in Table 22, A Self Employed Community Midwife (SECM) was present at the vast majority of births (96.9%). A second midwife was also present at the majority of births (80.9%). Of the 131 women who birthed at home, two infants were born before the arrival of either an SECM or a second midwife (1.5%). Both of the women whose babies were born unattended laboured within 75 minutes.

Table 22: Who was present at the birth by HSE area, 2017

	Overall (n=131)	Dublin NE (n=20)	Dublin Mid-Leinster (n=13)	West (n=11)	South (n=76)	South East (n=10)
SECM	127(96.9)	18(90.0)	13(100)	11(100)	75(98.7)	10(100)
Second Midwife	106(80.9)	15(75.0)	9(69.3)	10(90.9)	62(81.6)	8(80.0)
Doula	2(1.5)	0(0)	0(0)	0(00	2(2.6)	0(0)
Partner	127(96.9)	19(95.0)	13(100)	10(90.9)	75(98.7)	10(0)
Other	14(10.7)	3(15.0)	1(7.7)	1(9.1)	6(7.9)	2(20.0)

Note: Values are shown as n (%) unless otherwise stated. Values are not mutually exclusive.

Duration of labour

Over half of all the women laboured between three and six hours (mean duration 3.9 hours). The longest labour for women who birthed at home was 14 hours. As expected, parous women laboured faster (Figure 5) with almost one third of those women having laboured for less than three hours (45.6%).

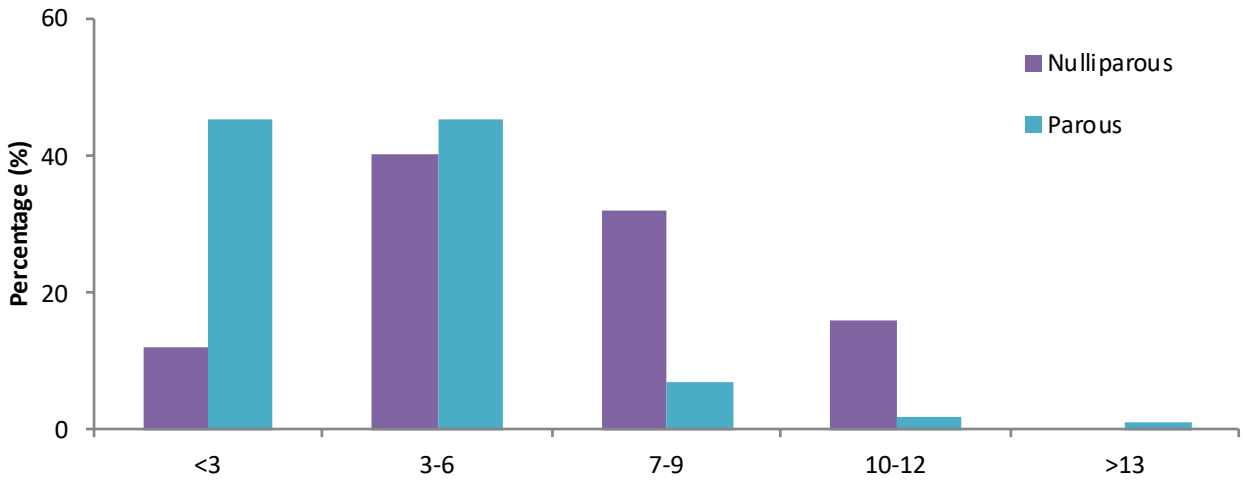

Figure 5: Duration of labour (hours completed) by parity, 2017

As documented in Table 23 there was some variation in maternal position for birth. Most women who gave birth at home were kneeling (48.1%; n=63). Almost one quarter of parous women birthed on all fours in the home (24.5%; n=26).

Table 23: Maternal position for birth by parity, 2017

	Nulliparous		Parous	
	Home	Hospital	Home	Hospital
Kneeling	9(36.0)	2(7.7)	54(50.9)	6(23.1)
All fours	5(20.0)	2(7.7)	26(24.5)	1(3.8)
Standing	0(0)	0(0)	7(6.6)	0(0)
Squatting	3(12.0)	0(0)	7(6.6)	1(3.8)
Sitting	4(16.0)	2(7.7)	5(4.7)	4(15.4)
Other	4(16.0)	11(42.3)	7(6.6)	2(7.7)
Unknown	0(0)	9(34.6)	0(0)	12(46.2)

Note: Values are shown as n (%) unless otherwise stated.

Management of the third stage of labour

The vast majority of women who gave birth at home had a physiological third stage of labour (79.4%; n=104). One in every three nulliparous women had active management at home (32.0%; Figure 6). Of the 25 women who had active management in the home, syntocinon was administered in 11 cases, syntometrine in 11 cases and three woman had another drug administered. Of the women who birthed in a maternity unit management of the third stage of labour was recorded in 47 of the 52 cases (90.4%). Of these women two thirds (51.1%; n=24) had active management.

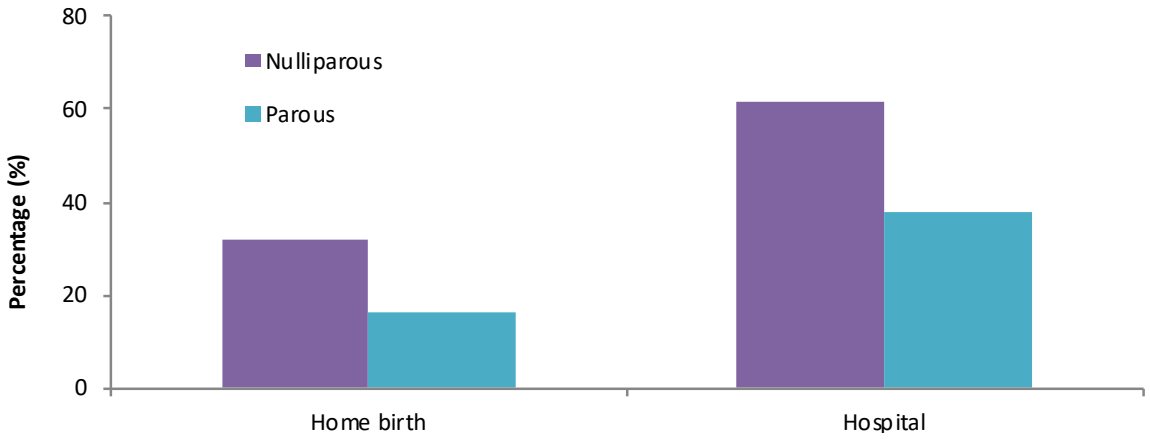

Figure 6: Active management of the third stage of labour, 2017

Pain Relief

Type of pain relief was recorded for all 131 women who gave birth at home (Figure 7). Half of the women used no pain relief (55.7%; n=73). Nulliparous women were almost twice as likely to use water as a type of pain relief than parous women (60.0% versus 33.9%). Of the 131 recorded, 40 women who had a home birth had a water birth (30.5%).

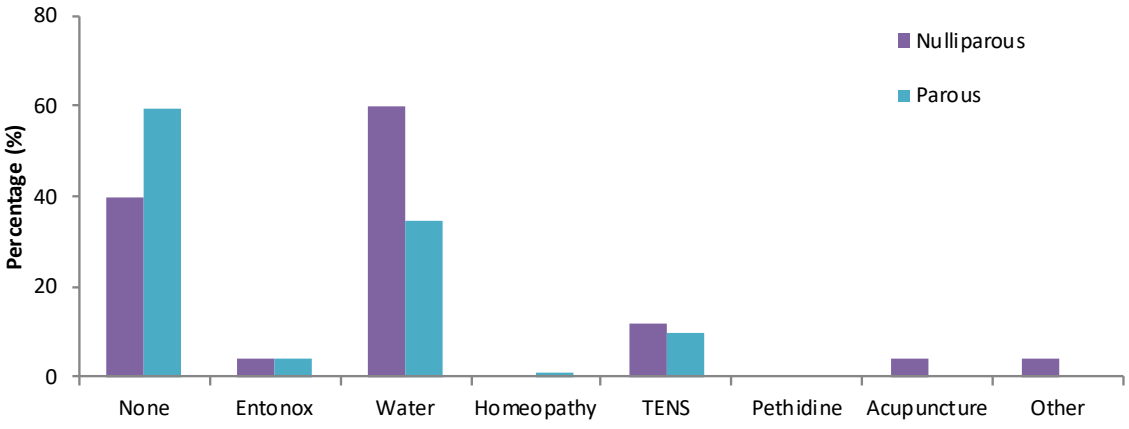

Figure 7: Pain relief used by women delivered in the home, 2017

Other incidences at birth

There were two cases of shoulder dystocia reported from the 131 women who gave birth at home (1.5%). This rate is in line with the rate which is reported for all deliveries (1.4%) in high-income countries[6]. For half of the women (54.9%; n=72 of 131) who gave birth at home the perineum remained intact (Table 24). Of those who birthed at home, parous women were more likely to have their perineum intact than nulliparous women (59.4% versus 36.0%). There were no reported incidences where women who gave birth at home had an episiotomy in 2017 compared to 10.6% of women who gave birth in the hospital following transfer. Three women who gave birth at home experienced a third degree tear (2.3%), which is slightly higher than the rate of third and fourth degree tears for all women who delivered vaginally (1.8%) in Ireland in 2017[7]. No women who gave birth at home experienced a fourth degree tear. Five times as many nulliparous women who gave birth at home underwent perineal suturing than parous women who gave birth at home (52.0%; n=13 of 25 versus 9.4%; n=10 of 106).

Table 24: Perineal Outcomes, 2017

	Nulliparous		Parous	
	Home	Hospital*	Home	Hospital**
Intact	9(36.0)	12(60.0)	63(59.4)	9(69.2)
Episiotomy	0(0)	3(15.0)	0(0)	2(15.4)
1st Degree Tear	4(16.0)	1(5.0)	20(18.9)	1(7.7)
2nd Degree Tear	10(40.0)	3(15.0)	22(20.8)	1(7.7)
3rd Degree Tear	2(8.0)	1(5.0)	1(0.9)	0(0)
4th Degree Tear	0(0)	0(0)	0(0)	0(0)

Note: Values are shown as n (%) unless otherwise stated. *Data missing for six women. **Data missing for 13 women.

Estimated blood loss at delivery

The average estimated blood loss for those who delivered at home was 266 ml. The vast majority of women who birthed at home lost between 100 and 499ml of blood (96.9%; n=127). The maximum recorded blood loss was estimated at 900 mls (Figure 8).

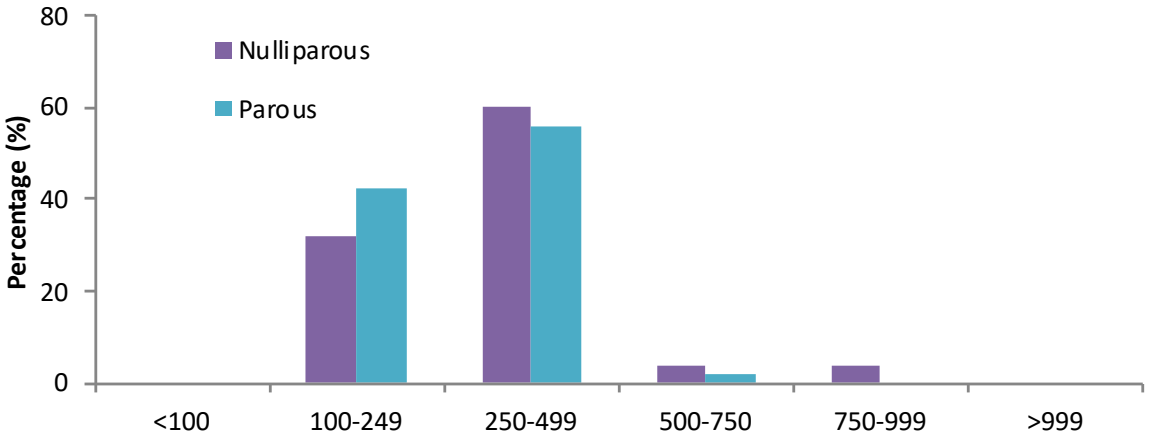

Figure 8: Estimated blood loss (mls) at delivery for women who delivered in the home, 2017

Characteristics of babies who were delivered at home

Of the 131 infants born at home, 67 were female (51.1%) and 64 were male (49.9%). The mean birth weight for infants born at home was 3,697 grams. Over two-thirds of infants delivered at home had a birth weight between 3,000 and 3,999 grams (70.2%; n=92). A quarter of infants (25.2%; n=33) who were delivered at home had a birth weight greater than 4,000 grams (Figure 9). There were no low birth weight infants (less than 2,500 grams) born at home.

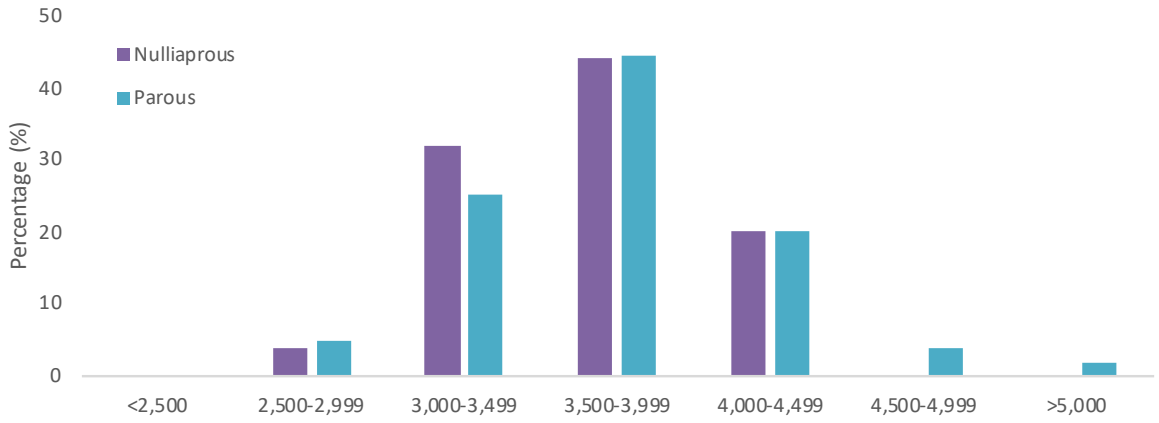

Figure 9: Distribution of birth weight in infants delivered in the home, 2017

Apgar scores

Data on Apgar score at 1 minute and 5 minutes were available for all infants born at home. Only 3.1% of infants (n=4) had an Apgar score of six, seven or eight at one minute after birth (Figure 10). At five minutes the majority of infants had an Apgar score of either nine (26.7%; n=35) or ten (70.9%; n=93).

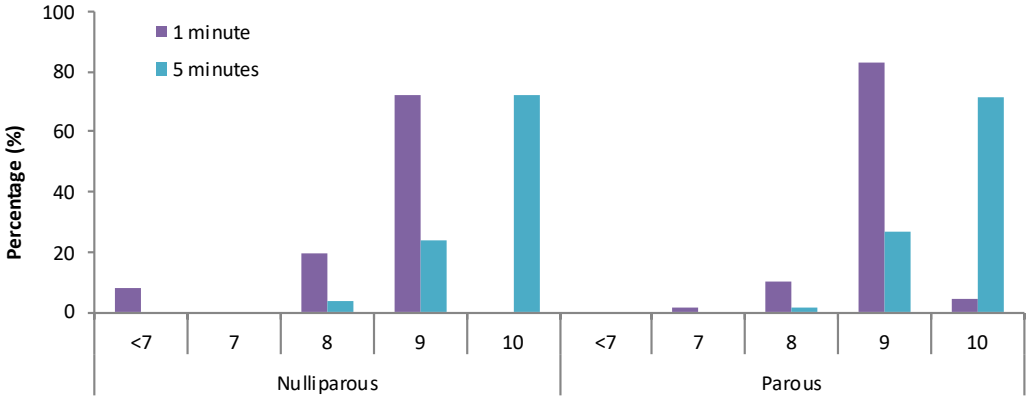

Figure 10: Apgar scores at 1 and 5 minutes for infants delivered in the home, 2017

Resuscitation

Six of the 131 infants born at home (4.6%) needed some form of resuscitation. Three of the six infants were resuscitated with suction only, and two infants were resuscitated by intermittent positive pressure ventilation and one infant received oxygen.

Delivery examination and screening

Four of the 131 infants (3.1%) were suspected of having a congenital abnormality specifically: Positional talipes, congenital hip dislocation, Mongolian spot and suspected tongue tie. The National Newborn Bloodspot Screening Programme was performed on 97.7% of the infants born at home (n=128 of 131).

As outlined in Table 25, medical examination of the newborn was carried out by a general practitioner in 81.7% (n=107 of 131) of cases where the infant was birthed at home. Data on medical examination was recorded for 43 of the 52 infants born in the maternity unit following transfer. Of the 43 recorded, examination was undertaken by a hospital paediatrician for all these infants (100%; n=43).

Table 25: Medical examination of the newborn, 2017

	Home	Hospital*
General Practitioner	107(81.7)	43(100)
Hospital Paediatrician	21(16.0)	0(0)
Not carried out	3(2.3)	(0)

Note: Values are shown as n (%) unless otherwise stated. *Data missing for nine infants

Of the infants who were birthed at home, half had vitamin K administered orally (48.0%, n=63). One third of infants who were born at home had vitamin K administered by intramuscular injection (34.4%; n=44). Vitamin K was not administered to 17.6% (n=23) of infants born at home versus 7.7% (n=4) of those infants born in the hospital following transfer (Table 26).

Table 26: Vitamin K administration, 2017

	Home	Hospital*
Administered orally	63(48.0)	8(15.4)
Administered IM	45(34.4)	31(59.6)
Not administered	23(17.6)	4(7.7)

Note: Values are shown as n (%) unless otherwise stated. *Data missing for nine infants

Method of feeding

Method of feeding was recorded on both day one and on day of discharge from the care of the SECM. Mothers who birth at home are discharged 14 days after the birth of their babies from the care of the SECM while mothers who deliver in the maternity hospital are generally discharged 3 days after the birth. As outlined in Table 27, the vast majority of mothers were exclusively breastfeeding on both day one (96.9%, n=127 of 131) and on day of discharge (96.9%, n=127 of 131). Mothers who birthed at home were twice as likely to breastfeed exclusively as the total population[4] on day of discharge (96.9% v 49.8%).

Table 27: Method of feeding, 2017

	Day one		Day of Discharge	
	Home	Hospital*	Home	Hospital*
Exclusive breastfeeding	127(96.9)	42(97.7)	127(96.9)	42(97.7)
Partial breastfeeding	3(2.3)	0(0)	2(1.5)	0(0)
Artificial	1(0.7)	1(2.3)	2(1.5)	1(2.3)

Note: Values are shown as n (%) unless otherwise stated. *Data missing for nine women.

Infant Transfers

Four of the infants delivered at home were transferred to hospital for reasons specified in Table 28. Three of the four infants were transferred by private care with one infant transferred by ambulance. One of the four infants were admitted into the Neonatal Intensive Care Unit.

Table 28: Reasons for infant transfer, 2017

	n
Transient Congenital Hyperinsulinism	1
Weight loss and jaundice	1
Low blood sugars and had not passed urine for 24hrs on day four	1
Fetal heart rate of 96 bpm in second stage of labour, delivered at home with Apgar of 7 at 1 minute and 9 at 5 minutes.	1

Postnatal transfers

Six women were transferred in the postnatal period for care in a maternity unit. Of the six women five were transferred by private car. One woman was transferred by ambulance when accompanying her infant who required transfer to the hospital following delivery at home. Indications for transfer are outlined in Table 29.

Table 29: Reasons for maternal transfer postpartum, 2017

	N=6*
Primary Postpartum haemorrhage	1
Feeling weak – diagnosed as rota virus in hospital	1
Third degree tear	3
Self-referral for lactation consultancy	1
Accompany infant being transferred following delivery	1

*Categories are not mutually exclusive

Medical interventions undertaken in the maternity hospital included; suturing of the perineum (50.0%; n=3) including one under spinal anaesthetic and administration of IV medication (16.7%; n=1).

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6) Hansen A, Chauhan SP. Shoulder dystocia: definitions and incidence. In Seminars in perinatology 2014 Jun 1 (Vol. 38, No. 4, pp. 184-188). WB Saunders.

7) National Women and Infants Health Programme and Clinical Programme for Obstetrics and Gynaecology. Irish Maternity Indicator System (IMIS) National Report 2017. Health Service Executive (HSE); 2017

Appendix A: Designated Midwife Officers

HSE Area	Contact
Dublin Mid-Leinster	Anne Clarke Designated Midwifery Officer HSE Dublin Mid Leinster Mill Lane Palmerstown Dublin 20 Tel: (01) 6201698 Mobile: 086 4107217 Email: homebirth.dublinml@hse.ie
Dublin North East	Ann O'Byrne Designated Midwifery Officer HSE DNE, Health Service Executive Dublin North City 2nd Floor, Ballymun Health Care Facility Ballymun Dublin 9 Tel: (01) 8467159 Mobile: 087 9457094 Email: homebirth.dne@hse.ie
South	Jo Delaney & Siobhán Sweeney Designated Midwifery Officers Home Birth Service Cork & Kerry Old Dr's Residence, St. Finbarrs Hospital Cork Tel: (021) 4923483 Mobile: 087 2889499 Email: Homebirth.South@hse.ie
West	Designated Midwifery Officer, HSE West Office of Nursing/Midwifery Service Directorate. Mobile: E-mail:

HSE Area	Contact
Carlow Kilkenny South Tipperary	Michelle Waldron Designated Midwifery Officer Project Officer NMPDU HSE South, Office Complex Kilcreene Hospital Campus Co. Kilkenny Tel: (056) 7785620 Mobile: 087 7585024 Email: michelle.waldron@hse.ie
Waterford	Janet Murphy Designated Midwifery Officer, Waterford Tel: (051) 842207 Mobile: 087 9243538 E-mail: Janet.Murphy1@hse.ie
Wexford	Team Leader Integrated Hospital/Community Midwifery Service Maternity Unit, Wexford General Hospital, Newtown Road, Wexford. Tel: (053) 9142233

Note: The above details are of Designated Midwifery Officers in their current post at time of publication. Mary T Gibbons exited her post in the West in 2017. Susan Ryan exited her post in Wexford in 2019

A list of the Self Employed Community Midwives is available from the following link to the HSE website; http://www.hse.ie/eng/services/list/3/maternity/homebirth_services.html

Appendix B: Medical conditions and other factors requiring planned birth in an obstetric unit

Table 1: Medical conditions indicating increased risk requiring planned birth at an obstetric unit

Disease area	Medical condition
Cardiovascular	Confirmed cardiac disease
	Hypertensive disorders
Respiratory	Asthma requiring an increase in treatment or hospital treatment in current pregnancy
	Cystic fibrosis
Haematological	Haemoglobinopathies – sickle-cell disease, beta-thalassaemia major
	History of thromboembolic disorders
	Immune thrombocytopenia purpura or other platelet disorder or platelet count below 100,000
	Von Willebrand's disease
	Bleeding disorder in the woman or unborn baby
	Atypical antibodies that carry a risk of haemolytic disease of the newborn
Infective	*Risk factors associated with group B streptococcus whereby antibiotics in labour would be recommended
	Infective hepatitis B or hepatitis C with abnormal liver function tests
	Carrier of/infected with HIV
	Toxoplasmosis – women receiving treatment
	Current active infection of chicken pox/rubella/genital herpes in the woman or baby
	Tuberculosis under treatment
Immune	Scleroderma
	Systemic lupus erythematosus
Endocrine	Diabetes
	Maternal thyrotoxicosis
Renal	Abnormal renal function
	Renal disease requiring supervision by a renal specialist
Neurological	Epilepsy
	Myasthenia gravis
	Previous cerebrovascular accident
Gastrointestinal	Liver disease associated with current abnormal liver function tests
Psychiatric	Psychiatric disorder requiring current in-hospital care

*Confirmed maternal colonisation with group B streptococcus in current pregnancy, pre-term labour <37weeks, pre-term pre-labour rupture of membranes, pre-labour rupture of membranes longer than 18 hours at onset of labour.

Table 2: Other factors indicating increased risk requiring planned birth at an obstetric unit

Factor	Additional Information
Previous pregnancy complications	Unexplained stillbirth/neonatal death or previous death related to intrapartum difficulty [to be discussed with neonatologists and obstetrician]
	Previous baby with neonatal encephalopathy
	Pre-eclampsia requiring preterm birth
	Placental abruption with adverse outcome
	Eclampsia
	Uterine rupture
	Primary postpartum haemorrhage requiring additional pharmacological treatment or blood transfusion
	Caesarean section
	Shoulder dystocia
	Retained placenta requiring manual removal
Current pregnancy	Multiple birth
	Placenta praevia
	Pre-eclampsia or pregnancy-induced hypertension
	Post-term pregnancy [For medical review by 40 weeks +10 days' gestation]. Home birth feasible to day 14 post-term.
	Pre-term labour <37 +0 weeks' gestation
	Pre-term pre-labour rupture of membranes
	Body mass index at booking greater than 35kg/m^2 or less than 18 kg/m^2
	Term pregnancy (37+0 to 42+0 weeks' gestation) rupture of membranes for more than 18 hours
	Placental abruption
	Anaemia – haemoglobin less than 10g/dl at onset of labour
	Confirmed intrauterine death
	Induction of labour
	Substance misuse
	Alcohol dependency requiring assessment or treatment
	Onset of gestational diabetes
	Malpresentation – breech or transverse lie
	Recurrent antepartum haemorrhage
Fetal indications	Small for gestational age in this pregnancy (less than fifth centile or reduced growth velocity on ultrasound)
	Abnormal fetal heart rate (FHR)/doppler studies
	Ultrasound diagnosis of oligo/polyhydramnios
Previous gynaecological history	Myomectomy
	Hysterotomy

Appendix C: Medical conditions and other factors requiring referral to consultant obstetrician by the midwife for final assessment when planning place of birth

Table 3: Medical conditions indicating individual assessment when planning place of birth

Disease area	Medical condition
Cardiovascular	Cardiac disease without intrapartum implications
Haematological	Atypical antibodies not putting the baby at risk of haemolytic disease
	Sickle-cell trait
	Thalassaemia trait
Infective	Hepatitis B/C with normal liver function tests
Immune	Nonspecific connective tissue disorders
Endocrine	Hyperthyroidism
	Unstable hypothyroidism such that a change in treatment is required
Skeletal/neurological	Spinal abnormalities
	Previous fractured pelvis
	Neurological deficits
Gastrointestinal	Liver disease without current abnormal liver function
	Crohn's disease
	Ulcerative colitis

Table 4: Other factors indicating individual assessment when planning place of birth

Factor	Additional information
Previous complications	Stillbirth/neonatal death with a known non-recurrent cause
	Pre-eclampsia developing at term
	Placental abruption with good outcome
	History of previous baby more than 4.5 kg
	Extensive vaginal, cervical, or third- or fourth-degree perineal trauma
	Previous term baby with jaundice requiring exchange transfusion
Current pregnancy	Antepartum bleeding of unknown origin (single episode after 24 weeks of gestation)
	Blood pressure of 140 mmHg systolic or 90 mmHg diastolic on two occasions
	Clinical or ultrasound suspicion of macrosomia
	Para 5 or more
	Recreational drug use
	Under current outpatient psychiatric care
	Age over 40 at booking
Fetal indications	Fetal abnormality
Gynaecological history	Major gynaecological surgery
	Cone biopsy or large loop excision of the transformation zone
	Fibroids
	Female circumcision
Other factors that may need to be considered in liaison with the DMO and SECM may include	Lack of family support/peer support network
	Safeguarding of children and vulnerable persons
	Inadequate facilities at home, terrain and location in line with ambulance service
	Distance from the midwife or *nearest hospital/maternity unit

*There is no national or international policy or a guideline indicating acceptable duration for transfer from home to hospital when a woman is in labour. The Birthplace National Prospective Cohort Study (2011) states: "effective management of transfer is clearly integral to providing good quality and safe care across a range of birth settings". In this study, team-working and transport issues were factors that staff and stakeholder respondents felt were key in the management of transfer. In the cohort study, the three main reasons for transfer were delay in the first stage of labour, signs of foetal distress, and delay in the second stage. Repair of perineal trauma was the primary reason for transfer after birth. A secondary analysis of the Birthplace National Prospective Cohort Study, Rowe (2013) et al, concluded that "transfers from home & commonly take up to 60 minutes from decision to transfer, to first assessment in an obstetric unit, even for transfers for potentially urgent reasons. Most transfers are not urgent and emergencies and adverse outcomes are uncommon, but urgent transfer is more likely for nulliparous women." It is noted that "in women who gave birth within 60 minutes after transfer, adverse neonatal outcomes occurred in 1-2% of transfers" (Rowe et al, 2013).

Other considerations include the RCOG principle that if LSCS is required, to obtain an optimal outcome the baby should be delivered within 30 minutes of the decision being made.

Another is the HIQA Response Standards for the National Ambulance Service, which requires a first responder to be on scene to a life-threatening or potentially life-threatening emergency within eight minutes in 75% of cases and a transporting vehicle on the scene of a life-threatening and potentially life-threatening emergency within 19 minutes in 80% of cases.

Using the above evidence, the clinical governance group recommend that it is the responsibility of the SECM to transfer the woman as soon as possible once the decision to transfer is made and to communicate clearly with the woman, her partner, ambulance service, the receiving maternity unit, labour ward manager and if necessary the consultant obstetrician and paediatrician on call. The communication must include the reason for the transfer, the current status, and possible preparation that would make handover of care more succinct. The midwife plans the transfer knowing the woman's home distance from the local maternity unit, the usual ambulance response times in that area and other influencing factors such as time of day, weather etc. Harris et al (2011) indicate that midwives in more remote units take account of distance and are more cautious in their decision-making about transfer. Ideally, the woman should be transferred to an obstetric unit within 30-40 minutes from the phone call to the ambulance service requesting the transfer. However, it is recognised and acknowledged that for many women it commonly takes 60 minutes (Rowe et al, 2013). The clinical governance group recommends that all transfers are prospectively reviewed and analysed so that more accurate guidance can be made in future policy documents.

Appendix D: Indications for intrapartum transfer

Table 5 Indications for intrapartum transfer

Have the following issues been discussed with and explained to the woman?
Spontaneous rupture of membranes greater than 18 hours
Indications for electronic foetal monitoring (EFM) including abnormalities of the foetal heart rate (FHR) on intermittent auscultation
Confirmed *delay in the first or second stage of labour
The presence of meconium
Maternal request for medical (epidural or alternative) pain relief
Obstetric emergency – including haemorrhage, cord presentation, cord prolapsed, maternal seizure or maternal collapse, shoulder dystocia, neonatal resuscitation
Retained placenta or incomplete placenta
Temperature of 38.0°C or above on a single reading or 37.5°C or above on two consecutive readings one hour apart
Malpresentation or breech presentation diagnosed for the first time at the onset of labour
A reading of 2+ of protein on urinalysis **and** a single reading of either raised diastolic blood pressure (over 90 mmHg) or raised systolic (over 140 mmHg)
Either raised diastolic blood pressure (over 90 mmHg) or raised systolic blood pressure (over 140 mmHg) on two consecutive readings taken 30 minutes apart
Third- or fourth-degree tear or other complicated perineal trauma requiring suturing
Any indication of maternal infection

Appendix E: Prolonged labour guidance (NICE 2014)

Delay in established first stage of labour

To define delay in established first stage, take the following into account:

- parity
- cervical dilatation and rate of change
- uterine contractions
- station and position of presenting part
- the woman's emotional state and physical mobility
- referral to the appropriate healthcare professional.

If delay in the established first stage is suspected, assess all aspects of progress in labour when diagnosing delay, including:

- cervical dilatation of less than 2 cm in four hours for first labours
- cervical dilatation of less than 2 cm in four hours or a slowing in the progress of labour for second or subsequent labours
- descent and rotation of the baby's head
- changes in the strength, duration and frequency of uterine contractions fetal and maternal wellbeing.

If delay is diagnosed, transfer the woman to obstetric care if she is at home.

Delay in established second stage of labour

For a nulliparous woman:

- Birth would be expected to take place within three hours of the start of the active second stage in most women.
- Diagnose delay in the active second stage when it has lasted two hours and refer the woman to a healthcare professional trained to undertake an operative vaginal birth if birth is not imminent.

Midwives will need to take into account the transfer time to the local maternity unit, knowing that birth has to take place within three hours from the start of the active second stage.

For a multiparous woman:

- Birth would be expected to take place within two hours of the start of the active second stage in most women.
- Diagnose delay in the active second stage when it has lasted one hour and refer the woman to a healthcare professional trained to undertake an operative vaginal birth if birth is not imminent.

Midwives will need to take into account the transfer time to the local maternity unit, knowing that birth has to take place within two hours from the start of the active second stage.

Appendix F: Indications for postpartum transfer

Table 6 Indications for Postpartum transfer

Mother:	Postpartum haemorrhage (>500 ml) or any amount that causes the mother's condition to deteriorate
	Pyrexia (38.0°C on one occasion or 37.5°C on two occasions one hour apart)
	Sustained tachycardia more than 90 beats/minute
	Tachypnoea more than 20 breaths/minute
	Dehydration and/or vomiting
	Mastitis
	Any abnormality or concern noted as per IMEWS observations
	Abdominal pain/pelvic pain or tenderness
	Symptoms of urinary tract infection
	Offensive lochia
	Perineal infection or excessive pain
	Woman generally unwell or seems unduly anxious or distressed
	Concerns for psychological wellbeing
	Signs of thromboembolic disease, for example DVT or pulmonary emboli
	Increase ≥ 10 mmHg in the systolic or diastolic blood pressure reading where a baseline has been established two hours following delivery
Infant	Congenital or genetic abnormality
	Respiratory symptoms – tachypnoea (RR>60/minute), grunting, rib recession, abnormal colour (for example cyanosis), suspected diaphragmatic hernia, trachea-esophageal fistula/atresia
	Low Apgar, ongoing central cyanosis Heart rate below 120 or above 160 beats/minute
	Body temperature of 38°C or above, or 37.5°C or above on two occasions 30 minutes apart, or less than 36°C
	Oxygen saturation below 95%
	Cyanosis confirmed by pulse oximetry
	Bile-stained vomiting, persistent vomiting or abdominal distension
	Delay in passing urine or meconium >24 hours
	Fits, jitteriness, abnormal lethargy, floppiness, high-pitched cry, pallor, reduced urinary output, symptoms of dehydration
	If meconium is present **during labour,** the woman should be transferred. If there is meconium at the birth, an assessment of the situation occurs. If the baby is vigorous and there are no signs of distress, transfer would not be indicated.
	The appearance of jaundice less than 24 hours old
In exceptional circumstances if a baby is born at home to a woman with rupture of the membranes ≥18 hours	Record the infant's temperature, heart rate, respiratory rate at regular intervals in the first 24 hours following birth, ongoing observation and monitoring for offensive odour, change in skin colour, levels of alertness, feeding pattern, lethargy. Where there is any deviation from the norm in respect of the mother and the baby then transfer to hospital should be considered.

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