5

THE CARE OF PREGNANT WOMEN AND BABIES DURING PREGNANCY AND THE POSTPARTUM PERIOD

5. THE CARE OF PREGNANT WOMEN AND BABIES DURING PREGNANCY AND THE POSTPARTUM PERIOD

CORE

Mode of delivery according to parity, plurality, presentation, previous caesarean section, and gestational age (C10)

RECOMMENDED

Percentage of all pregnancies following treatment for subfertility (R13)
Distribution of timing of first antenatal visit (R14)
Distribution of births by mode of onset of labour (R15)
Distribution of place of birth by volume of deliveries (R16)
Percentage of very preterm births delivered in units without a NICU (R17)
Episiotomy rate (R18)
Percentage of births without obstetric intervention (R19)
Percentage of infants breast fed at birth (R20)

The development of systematic reviewing and the promotion of the concept of evidence-based health care in the field of maternity care began in the late 1980s. The tradition of evaluating medical practices and working to find a balance between insufficient or excess intervention might have been expected to lead to similarities between the patterns of maternity care in Europe. However, Euro-Peristat and other European projects have documented wide diversity in approaches to providing care during pregnancy and the postpartum period. The indicators in this section were devised to allow comparison of key components of care for mothers and babies in order to document these differences and make it possible to relate them to health outcomes. The indicator on births without obstetric intervention will be issued when the full Euro-Peristat tables are released in October as this indicator requires more detailed subgroup analyses.

This section contains one core indicator and 8 recommended indicators. The core indicator is presented first, while the recommended indicators are organised following the chronological pathway through pregnancy, delivery, and the postnatal period. Since the previous report, we have separated the indicator on trauma to the perineum into 2 indicators, one, classed under maternal health, relates to tears to the perineum and the other, presented in this section, pertains to episiotomies, which are obstetric interventions rather than health outcomes.

Pregnancy is not an illness, but a physiological process associated with health risks for some women and babies. When all pregnant women have access to comprehensive prenatal care and deliveries are attended by qualified medical personnel, as is the case in European countries, most women and newborns will not experience complications. A major concern is to guarantee an adequate level of medical safety for this group while avoiding overmedicalisation of the pregnancy and, in particular, procedures with side effects. In addition to data on care for babies at highest risk (R17 on births in units without a NICU), the indicators in this section provide information about the care of the general population of pregnant women and babies. By collecting data on interventions by subgroups defined by levels of risk, we aim to provide more relevant data for evaluating practices with respect to the current scientific evidence about effectiveness.

C10 MODE OF DELIVERY

JUSTIFICATION

The substantial rise in obstetric intervention since the 1970s in most developed countries is a long-standing and continuing cause for concern.[1-3] Consequences of the rise in caesarean rates in both high and middle income countries include elevated risks of placenta accreta, placenta praevia, placental abruption, and stillbirth in subsequent pregnancies. Data from the Organisation for European Co-operation and Development (OECD) show a continuing rise in caesarean rates in most member countries, despite signs of flattening in a few countries with high rates.[3] Several factors have been cited as possible explanations for this increase, including fear of litigation, financial incentives related to methods of payment,[4] women's requests for caesarean births,[5] and the perception that a caesarean section is a safe procedure.[6]

Countries also vary in their use of operative vaginal delivery, either with forceps or vacuum extraction.[2] In addition to wide variations between countries, operative delivery rates also vary by parity, previous caesarean section, presentation, and plurality, so comparisons of methods of delivery according to each of these factors can be informative. Because operative delivery, especially caesarean section, may increase the risk of repeated operative delivery in subsequent pregnancies, it is useful to compare caesarean section rates among primiparous women, especially as their complication rates are higher than those of women who have already given birth.

In some specific situations, the need for intervention is clear. For others there is ongoing debate, for example, about the use of caesarean section for breech presentation, multiple births, and women with a previous caesarean section. This lack of consensus means it is useful to highlight differences in practices by comparing rates of operative delivery by presentation and plurality, as well as rates of repeat caesarean sections.

DEFINITION AND PRESENTATION OF INDICATOR

This indicator was defined as the percentage distribution of all births, live born and stillborn, by method of delivery for all women and then subdivided by parity, previous caesarean section, presentation, and plurality. Data were also requested for caesarean sections as a percentage of births at grouped weeks of gestational age. Summary tables presented in this report are restricted to overall rates. Rates by subgroup will be made available when the full set of tables is issued on the Euro-Peristat website.

METHODOLOGICAL ISSUES IN THE COMPUTATION, REPORTING, AND INTERPRETATION OF THE INDICATOR

Countries differ in the ways that they classify caesarean sections. Some countries subdivide them according to whether they were undertaken before or during labour. Others use the subdivision into elective caesarean sections, which include all those planned before the onset of labour and thus include a few that take place after labour has started, and emergency or unplanned caesarean sections. Sometimes, as in the Scottish Audit of Caesarean Section, emergency caesarean sections include those performed before the onset of labour in response to a clinical emergency.[7] In Poland, Portugal, England, and Wales, rates were reported per woman. This may result in slight underestimates of operative deliveries, as multiple births to one woman are counted only once.

DATA SOURCES AND AVAILABILITY OF INDICATOR

Method of delivery was available for everywhere except Greece. Data about whether caesarean sections took place before labour or were elective were not available for Ireland, Spain, Catalonia, Lithuania, Luxembourg, Hungary, Austria, Poland, Portugal, Iceland, Slovakia or Switzerland. In Spain, national data refer to public hospitals only.

RESULTS

Cyprus had the highest overall caesarean rate, at 52.2%, followed by Italy with 38.0%, Romania with 36.9%, and Portugal with 36.3%, as Figure 5.1 shows. In Spain, data came from public hospitals. The inclusion of private hospitals increased the national total from 22.2% to 25.3%; however, data on instrumental deliveries were not available for public and private hospitals combined. Germany, Hungary, Luxembourg, Malta, Poland, and Switzerland also had rates of 30% or higher. Everywhere else, rates were below 30%. Only the Netherlands, Slovenia, Finland, Sweden, Iceland, and Norway had rates below 20%. There was no clear inverse correlation with rates of instrumental vaginal delivery. These exceeded 10% in Ireland, Flanders, Spain, France, Luxembourg, the Netherlands, Portugal, Wales, England, Scotland, Northern Ireland, and Switzerland. In contrast, they accounted for fewer than 2% of deliveries in the Czech Republic, Latvia, Lithuania, Poland, and Romania, and at least 2% but fewer than 5% in Estonia, Italy, Cyprus, Malta, Slovakia, and Slovenia.

For the countries with available data, caesarean section rates were subdivided into those undertaken or at least planned before labour and those decided upon and undertaken, or simply undertaken, after the onset of labour; they are shown in Figure 5.2. Rates of caesarean sections that were planned or undertaken before labour varied less between countries, except in Cyprus and Italy where nearly 40% and 25% of births, respectively, were elective caesareans. Romania had the highest rate of caesarean sections performed during labour.

Figure 5.3 displays the geographic distribution of caesarean section rates, illustrating similarities in practice between neighbouring countries, as in eastern Europe (higher rates) and the Nordic countries (lower rates).

CHANGES FROM 2004 TO 2010

Apart from a slight reduction in Finland and Sweden, caesarean section rates rose everywhere between 2004 and 2010, as shown in Figure 5.4, which orders countries by their 2004 rates. We see that increases occurred among countries with both high and low levels of caesareans in 2004. Increases ranged from under 0.2% in Italy to over 7% in Lithuania, Slovakia, and Poland. In general, increases were most marked in the countries of eastern Europe and in Germany and Austria.

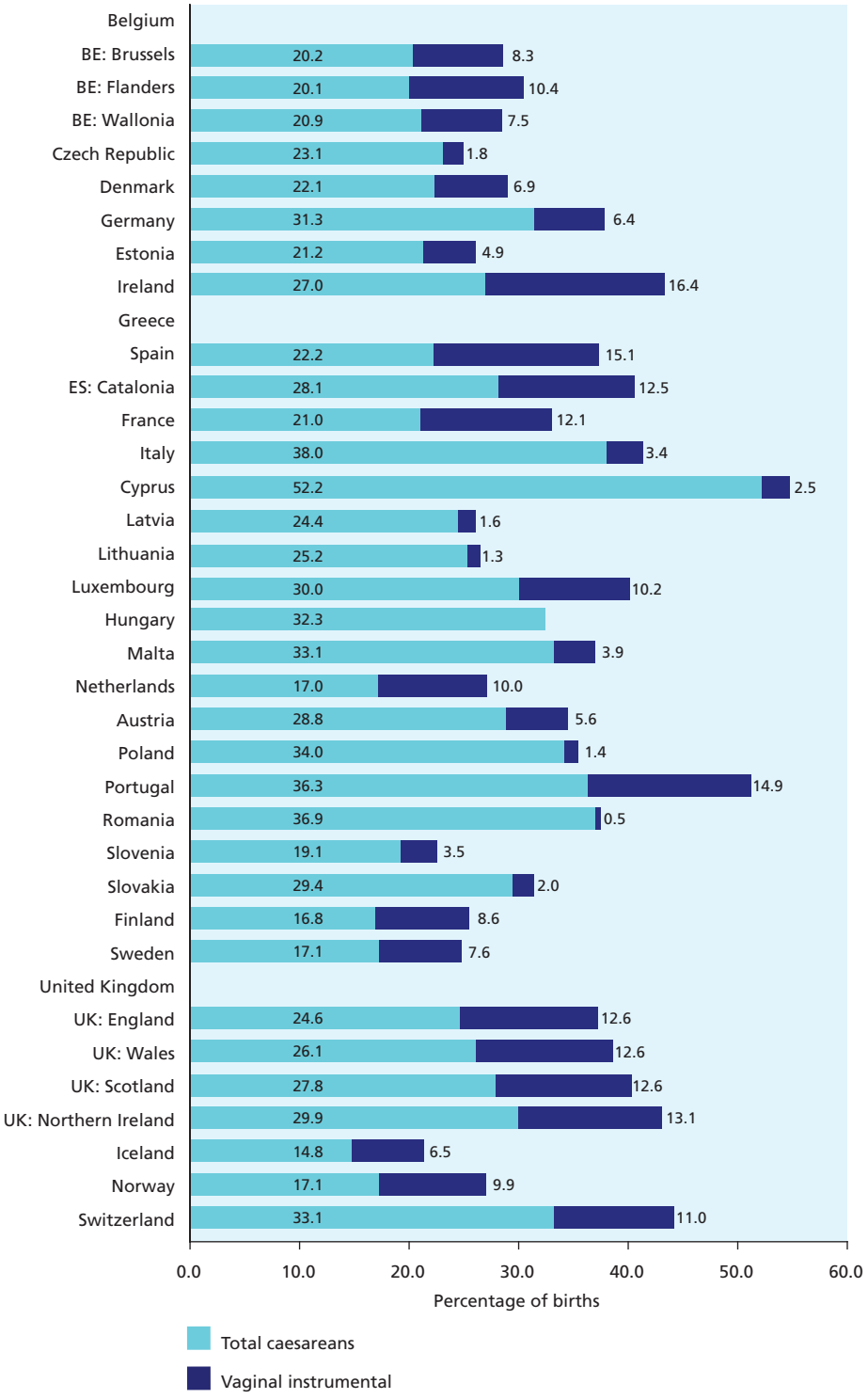
KEY POINTS

Data about mode of delivery show marked variations, with relatively low levels of interventions in Slovenia, the Nordic countries, and the Netherlands, and higher levels in the more southern countries, most notably Cyprus, as well as Italy, Malta, Portugal, and Romania. There were considerable differences in the relative contribution of caesarean sections and operative vaginal deliveries to the overall rate of operative births. Equally marked differences were apparent between rates of caesarean sections where the decision was made or the caesarean undertaken before labour. These differences in practices raise questions about clinical effectiveness and the role of evidence.

REFERENCES

1. Notzon FC, Placek PJ, Taffel SM. Comparisons of national cesarean-section rates. *N Engl J Med*. 1987; 316:386-9.
2. Wildman K, Blondel B, Nijhuis J, Defoort P, Bakoula C. European indicators of health care during pregnancy, delivery and the postpartum period. *Eur J Obstet Gynec Reprod Biol*. 2003; 111:S53-S65.
3. Declerq E, Young R, Cabral H, Ecker J. Is a rising cesarean delivery rate inevitable? Trends in industrialized countries, 1987 to 2007. *Birth*. 2011; 38:99-104.
4. Coulm B, Le Ray C, Lelong N, Drewniak N, Zeitlin J. Obstetric interventions for low-risk pregnant women in France: do maternity unit characteristics make a difference? *Birth* (in press).
5. Habiba M, Kaminski M, Da Frè M, Marsal K, Bleker O, Librero J, Grandjean H, Gratia P, Guaschino S, Heyl W, Taylor D, Cuttini M. Caesarean section on request: a comparison of obstetricians' attitudes in eight European countries. *BJOG*. 2006; 113(6):647-56.
6. American College of Obstetricians and Gynecologists. Vaginal birth after previous cesarean delivery. *Obstet Gynecol*. 2010; 116(2 pt 1):450-463.
7. McIlwaine G, Boulton-Jones C, Cole S, Wilkinson C. Caesarean section in Scotland 1994/5: a National Audit. Edinburgh: Scottish Programme for Clinical Effectiveness in Reproductive Health. 1995.

Figure 5.1 Percentage of births by mode of delivery in 2010



NOTE: for Spain, percentages refer to public hospitals only.

Figure 5.2 Percentage of births by type of caesarean section in 2010

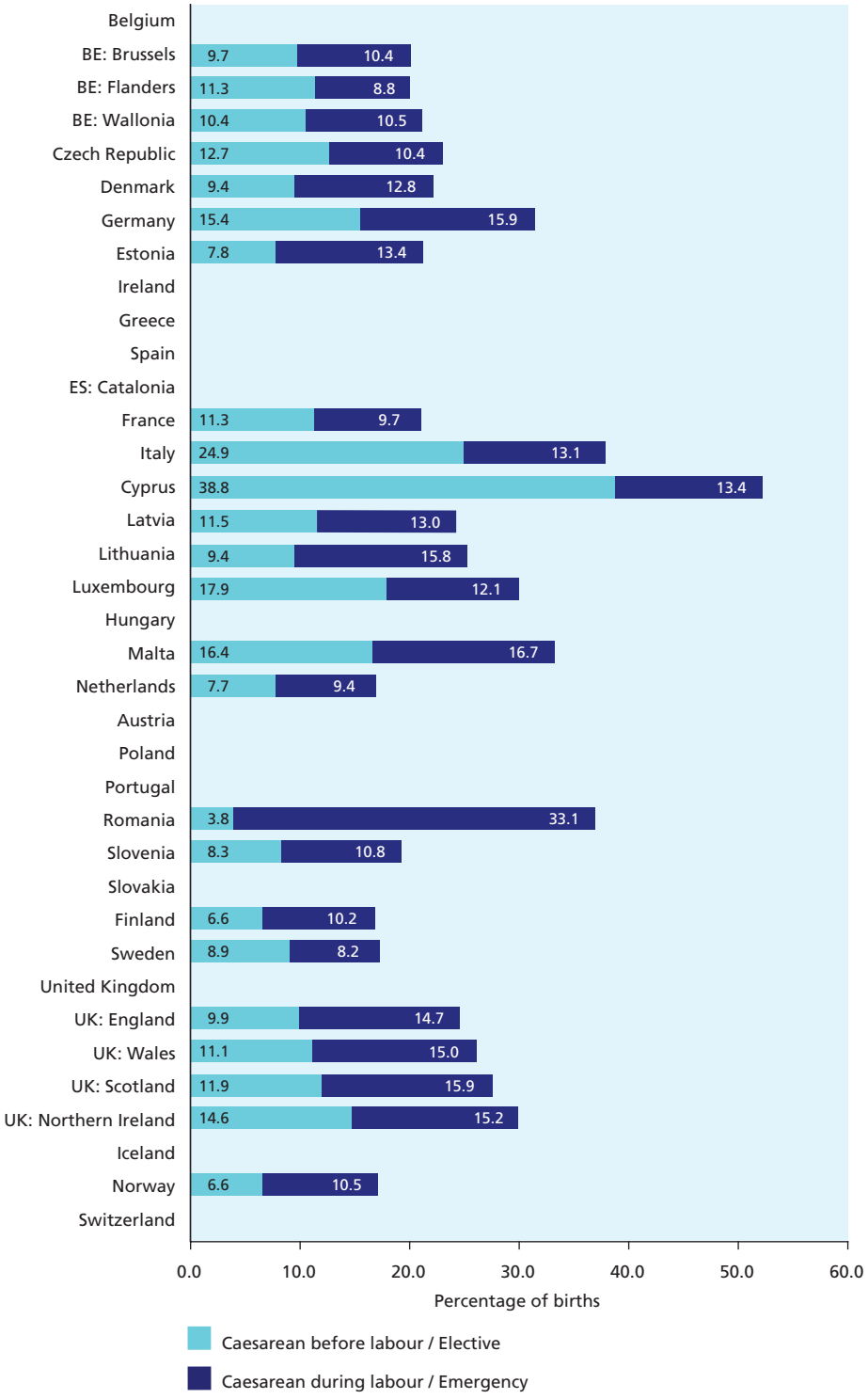
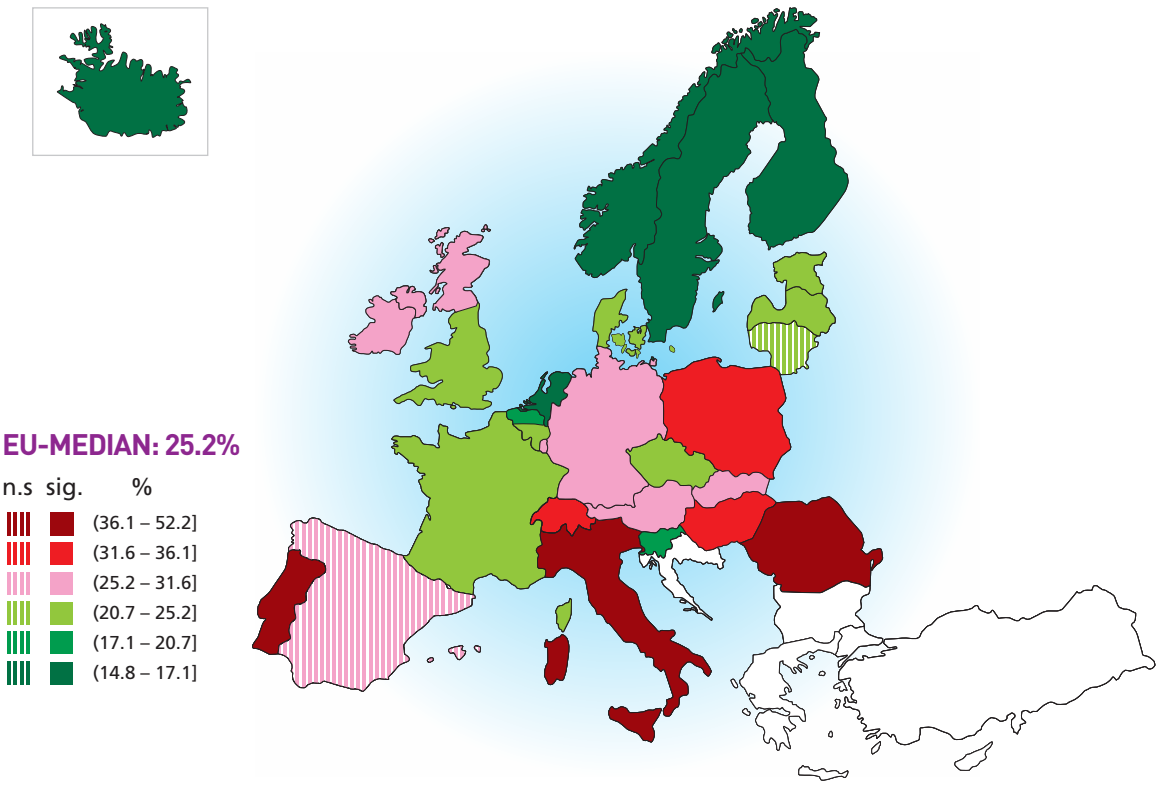
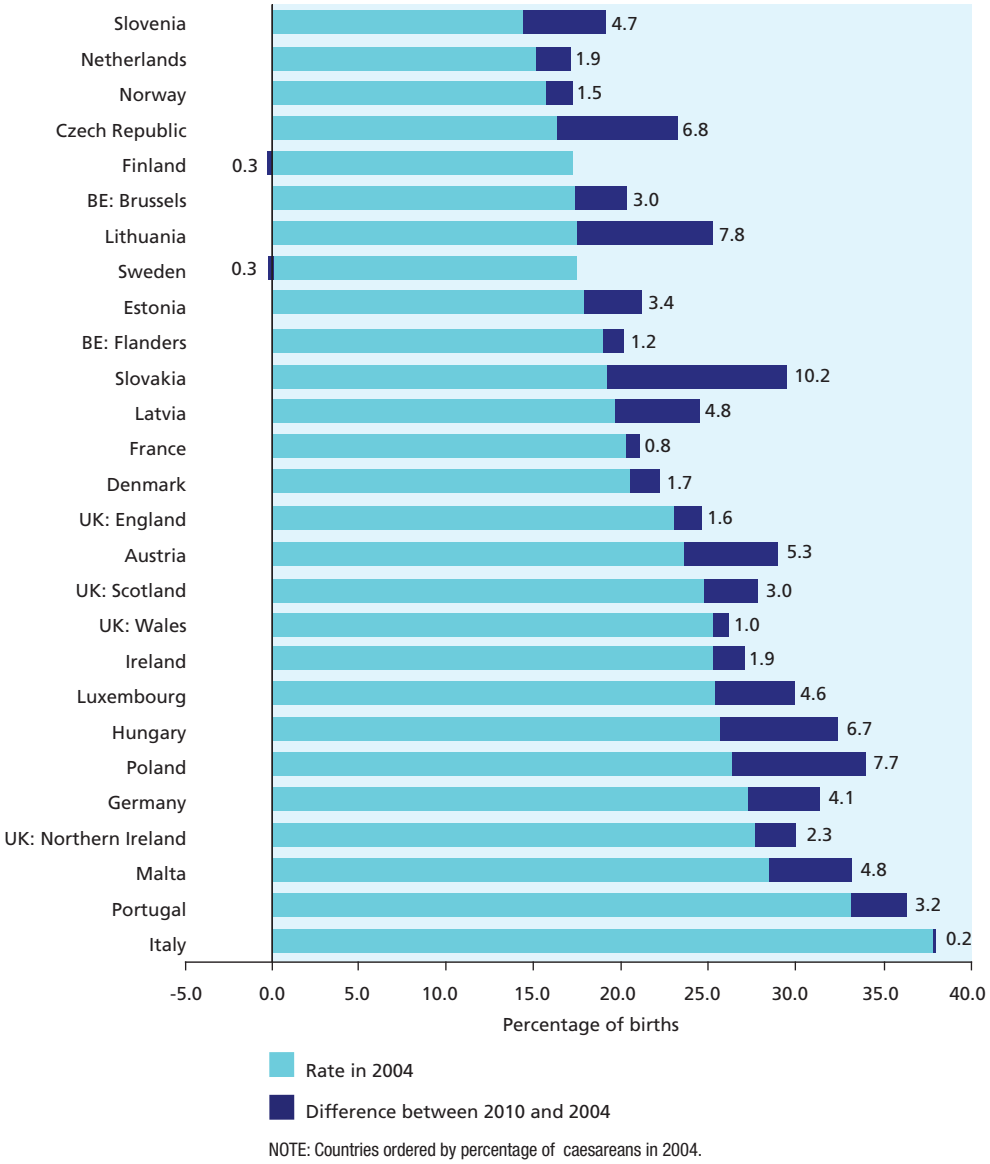


Figure 5.3 Caesareans as a percentage of all births in 2010



NOTE: Rates for countries and regions are coloured for groups defined by the 10th, 25th, 50th, 75th, 90th, and 100th percentiles of the indicator. Individual regions are coloured to show sign and significance of difference from the EU median. Regions that fall outside the 99% Wilson-score control limits of a funnel plot constructed around the EU-median against population size differ significantly (sig) and are shown as solid colours. Regions within the control limits (n.s.) are displayed with vertical hatching.

Figure 5.4 Percentage of births by caesarean section in 2004 and change 2004-2010



NOTE: Countries ordered by percentage of caesareans in 2004.

R13 PREGNANCIES FOLLOWING SUBFERTILITY TREATMENT

JUSTIFICATION

Although the percentage of all births that result from the use of assisted reproductive techniques (ART) is low, these births are the subject of great interest in many countries. This percentage is likely continue to increase as a result of demographic changes, notably the rising age at childbirth as a consequence of delayed childbearing (see C8), and of new developments in ART. Children conceived using ART have a higher risk of some adverse outcomes compared with children conceived spontaneously.[1-3] They tend to have higher rates of perinatal death, preterm birth, low birth weight, and congenital anomalies.[1-5] These techniques are also more likely to result in multiple pregnancies, unless single embryo transfer is used (see C7).[1,5] It is still unclear whether the observed higher rates of adverse outcome are associated with factors related to the

assisted conception procedures themselves, to factors related to the parents' subfertility, or to a combination of both.[6,7]

DEFINITION AND PRESENTATION OF INDICATOR

ART are defined as: (i) ovulation induction, (ii) intrauterine insemination with or without ovulation induction; or (iii) in vitro fertilisation (IVF), which may include intracytoplasmic sperm injection, in vitro maturation, and frozen embryo transfer. Figure 5.5 presents the numbers of women with live births or stillbirths after ART as a percentage of all women with liveborn or stillborn babies.

DATA SOURCES AND AVAILABILITY OF INDICATOR IN EUROPEAN COUNTRIES

Nineteen countries and regions were able to provide some data for this indicator. Sixteen countries or regions provided data for IVF, 7 for intrauterine insemination, 11 for ovulation induction, and one region for intrauterine insemination and ovulation induction combined. Cyprus and Malta provided combined data for all treatments. Only France, Luxembourg, the Netherlands, Slovenia, Finland, and the United Kingdom had data for all types of assisted reproduction.

METHODOLOGICAL ISSUES IN THE COMPUTATION, REPORTING, AND INTERPRETATION OF THE INDICATOR

The data for France came from a representative survey where all women were asked a question about the use of these techniques. In other countries, this item is included in some medical birth registers, which probably contributes to lower estimates. Few countries have specialist registers to cover all or some ART. Where they do exist, as in the United Kingdom, links with data recorded at birth may be limited.

The major problem with this indicator is that it is difficult to know whether the relevant information is systematically collected for all pregnancies or is noted only when the birth attendants are aware that ART were used. This problem is particularly acute for the less invasive procedures, such as ovulation induction or intrauterine insemination, because the midwife or the obstetrician managing the delivery is less likely to be aware of them. When women are asked about these procedures at delivery, they may be hesitant to report their use. A related problem is the proportion of missing data. Brussels, France, and Cyprus reported missing data rates between 5% and 10%, and the Netherlands a rate of 29.4%. Seven countries reported no missing data. The absence of missing data might indicate either that data were recorded for all women or that women without this information were assumed not to have used ART. Only 4 countries and regions rated their data as good (Estonia, Finland, Flanders, and France), 12 had concerns with the quality of their data (Brussels, Cyprus, Germany, Hungary, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Slovenia, and Switzerland).

RESULTS

In all, 5.7% of women giving birth in Flanders, 5.2% in France, 4.1% in Luxembourg, 4.0% in the Netherlands, 3.5% in Finland, and 2.8% in Slovenia became pregnant after some form of ART. In Belgium, the proportion of IVF children was about 3.5 to 3.8% in the 3 regions. In Iceland, this proportion was 3.6%. The proportion was between 2% to 3% in Norway, Luxembourg, Slovenia, Finland, France, and Estonia, and between 1% and 2% in Switzerland, the Netherlands, and the UK. For Hungary and Latvia, this proportion fell to below 1%. For all countries and regions with comparable data in 2004 and 2010, the proportion of IVF children increased by 0.4% (Slovenia and France) to 1.4% (Estonia), excluding the Netherlands which showed a decrease of 0.1%, most likely due to under-reporting.

The percentage of births following intrauterine insemination was 0.9 to 1.3% in the Netherlands, France, and Luxemburg, 0.6% in Finland, 0.3% in Italy, and 0.1% in Slovenia. The percentage of OI births following ovulation induction was 2.3% in France and 1.2% in the Netherlands, between 0.6% and 1% in Brussels, Luxembourg, and Finland, and below 0.5% in Lithuania, Slovenia, Wallonia, and Norway.

KEY POINTS

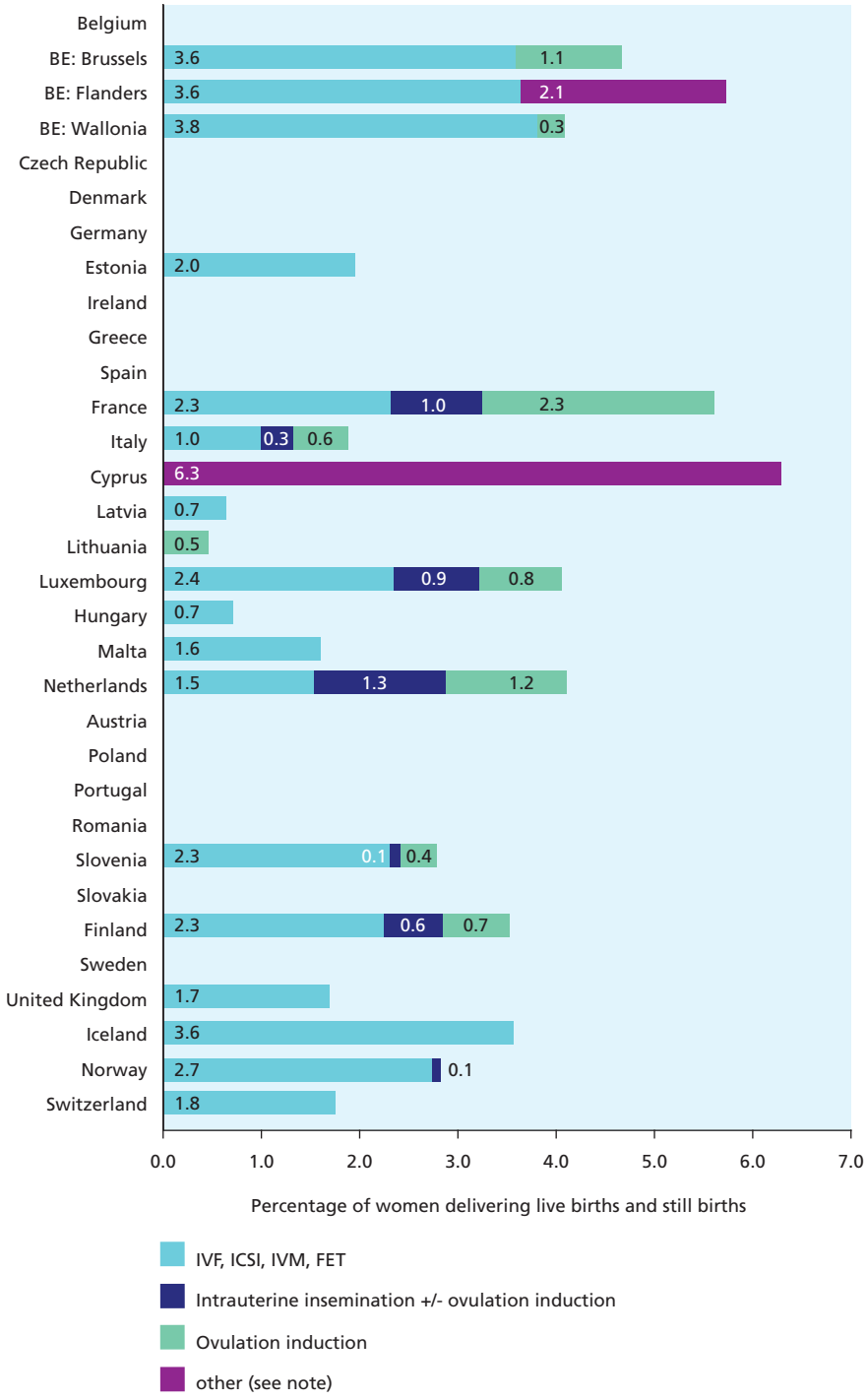
Up to 5 to 6% of births in some countries may occur after use of some form of ART, although the use of the less invasive procedures appears to be under-reported in most data systems. Births after IVF account for 2 to 4% of all births. These data corroborate the volume of ART services as collected by the European Society of Human Reproduction and Embryology (ESHRE) from fertility clinics. The number of treatments started in 2008 was highest per woman of reproductive age in Belgium, the 5 Nordic countries, and the Czech Republic, above the European average in Estonia, the Netherlands, and Germany, and under the European average in the United Kingdom, Italy, Austria, Portugal, and Romania.[6]

To evaluate health services provided to couples with difficulties conceiving, member states should consider implementing population-based systems to record all types of subfertility management including the numbers of couples/women, the management and procedures they undergo, and the outcomes in terms of clinical pregnancies, live births, and stillbirths.

KEY REFERENCES

1. Shevell T, Malone FD, Vidaver J, Porter TF, Luthy DA, Comstock CH, Hankins GD, Eddleman K, Dolan S, Dugoff L, Craigo S, Timor IE, Carr SR, Wolfe HM, Bianchi DW, D'Alton ME. Assisted reproductive technology and pregnancy outcome. *Obstet Gynecol*. 2005; 106(5):1039-1045.
2. Schieve LA, Rasmussen SA, Buck GM, Schendel DE, Reynolds MA, Wright VC. Are children born after assisted reproductive technology at increased risk for adverse health outcomes? *Obstet Gynecol.* 2004; 103(6):1154-63.
3. Schieve LA, Rasmussen SA, Reefhuis J. Risk of birth defects among children conceived with assisted reproductive technology: providing an epidemiologic context to the data. *Fertil Steril*. 2005; 84(5):1320-4.
4. Ericson A, Kallen B. Congenital malformations in infants born after IVF: a population based study. *Hum Reprod*. 2001; 16:504-509.
5. Koivurova S, Hartikainen AL, Gissler M, Hemminki E, Sovio U, Järvelin MR. Neonatal outcome and congenital malformations in children born after in vitro fertilization. *Hum Reprod*. 2002; 17:1391-8.
6. Ferraretti A.P., Goossens V, de Mouzon J, Bhattacharya S, Castilla JA, Korsak V, Kupka M, Nygren KG, Nyboe Andersen A, the European IVF-monitoring (EIM), and Consortium for the European Society of Human Reproduction and Embryology (ESHRE). Assisted reproductive technology in Europe, 2008: results generated from European registers by ESHRE. *Hum. Reprod*. 2012: 27:2571-84.
7. Romundstad LB, Romundstad PR, Sunde A, von Düring V, Skjaerven R, Gunnell D, Vatten LJ. Effects of technology or maternal factors on perinatal outcome after assisted fertilisation: a population-based cohort study. *Lancet*. 2008; 372(9640):737-43.

Figure 5.5 Percentage of women with live births and stillbirths in 2010 following treatment for subfertility.



NOTE: In Flanders, ovulation induction and intrauterine insemination+ovarian induction combined. Cyprus data combines all available treatments.
Both Switzerland and the Netherland had serious concerns about the quality of these data.
IVF: in vitro fertilisation; ICSI: intracytoplasmic sperm injection; IVM: in vitro maturation; FET: frozen embryo transfer.

R14 TIMING OF FIRST ANTENATAL VISIT

JUSTIFICATION

Promoting antenatal care and defining its content are central components of maternal and child health policy in all European countries. They all cover the costs of a prenatal care package and some include incentives for pregnant women to use these services. The aim is to screen for potential complications in the pregnancy and to prevent and treat them. However, the evidence base concerning the optimal quantity and content of antenatal care is far from clear. In Europe, despite enormous variability in what constitutes basic prenatal care during pregnancy,[1,2] there is a general consensus that it should begin early. Ideally, when the pregnancy is planned, a preconceptional visit is considered desirable, to ensure folic acid supplementation and counselling or any necessary treatment. It allows for identification of specific medical conditions, such as previously unknown diabetes, social or mental health problems (such as intimate partner violence), and addictions to smoking or other substances in time for effective intervention. This preconceptual visit is being promoted systematically in some EU countries, including Hungary, Belgium, the Netherlands, and possibly more.[3] With or without preconceptional care, an early first antenatal visit has become the accepted standard for antenatal care.[4] It includes the items described in the preconception visit, accurate dating of gestational age, and information for women. Timing of the first antenatal visit is an indicator of access to antenatal care, which can be influenced by both maternal social conditions and organisation of care.[5] It is less likely to be affected by policy differences between member states than the recommended number of antenatal visits, which varies.

DEFINITION AND PRESENTATION OF INDICATOR

The indicator shows the distribution of timing of the first antenatal visit by trimester of pregnancy for all women with liveborn or stillborn babies. Trimesters are defined as follows: the first trimester is the period up to 14 weeks, the second trimester 15-27 weeks, and the third from 28 weeks to delivery. Summary Table R14 presents the distribution of the trimester of the first antenatal visit per 100 women with liveborn or stillborn babies; the distribution also includes women who received no antenatal care.

DATA SOURCES AND AVAILABILITY OF INDICATOR IN EUROPEAN COUNTRIES; METHODOLOGICAL ISSUES IN THE COMPUTATION, REPORTING, AND INTERPRETATION OF THE INDICATOR

Nineteen countries and regions were able to provide information about trimester of initiation of antenatal care, as shown in Figure 5.6. Data were complete with few missing. It is not known what the content of this first visit might be. It is also possible that the first recorded visit may refer to the first visit with the mainstream antenatal care system, rather than the first health provider seen about the pregnancy. It might also refer to the "booking visit" or to the first ultrasound scan. Some countries provide data by trimesters that do not coincide with the Euro-Peristat definition.

RESULTS

Figure 5.5 describes the availability of data about the timing of the first antenatal visit and its distribution in European countries. Missing values vary between countries from 0% to 19%. Although the vast majority of women begin antenatal care during the first trimester, care begins in the second or third trimester for between 2% (Poland) and 33% (Malta) of all women. The largest number of countries reported between 4 and 7% of women with care after the first trimester (10 out of 19). The percentage of women with no antenatal care at all ranges from 0

to 2.8%. Some of this variation may be related to the differences in the manner that timing of antenatal care level is assessed. In particular, it is unclear how different countries count foreigners or recent immigrants who were not booked in their countries, arrived just around the time of birth, but did have antenatal care in their own country.

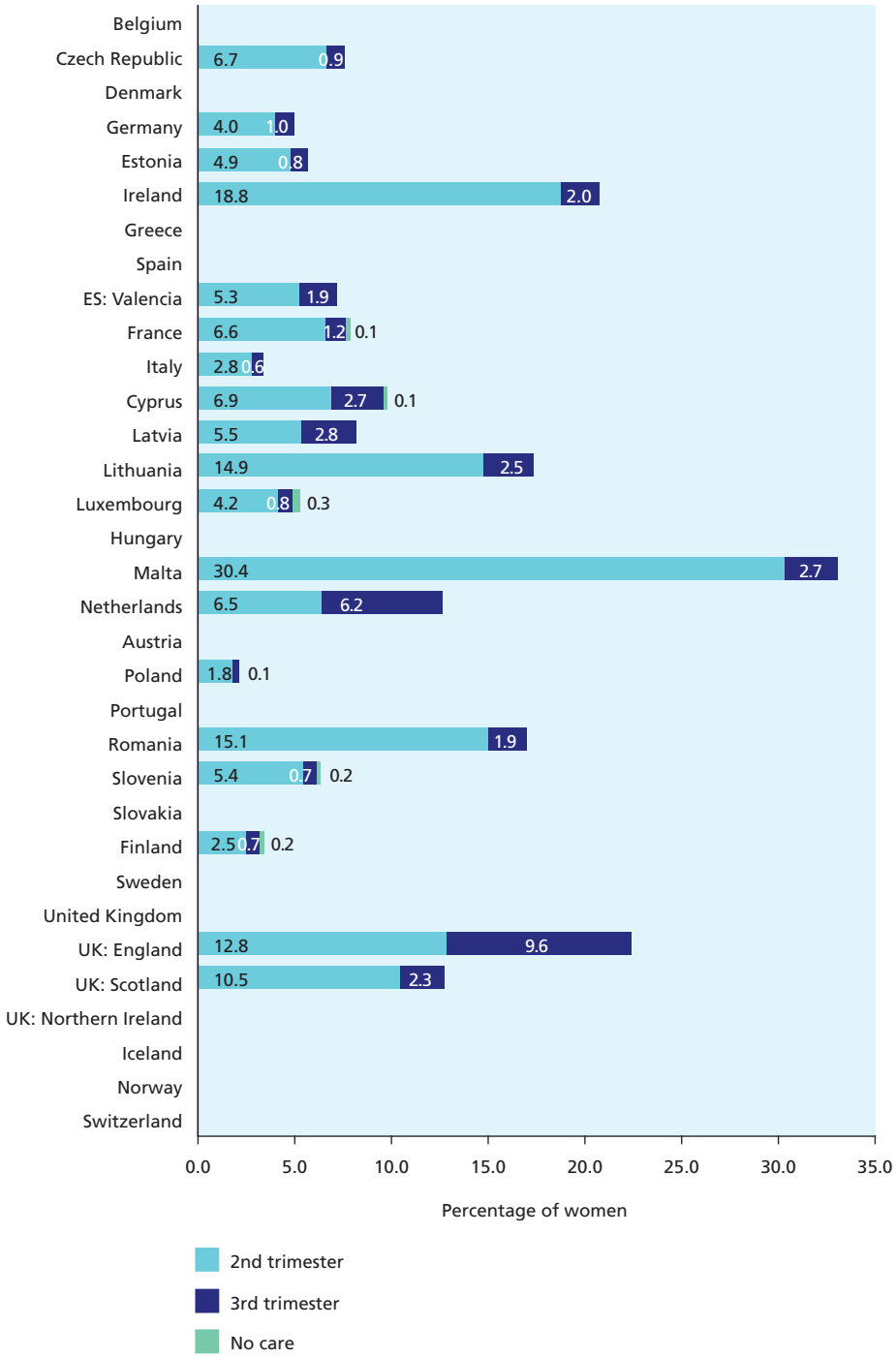
KEY POINTS

It is difficult to collect data about the first antenatal visit with medical birth registers because of the potential confusion between the first consultation with a health professional and the first visit to a hospital or maternity unit. Whether these first visits are recorded may also depend on the organisation of maternity care in the country. In general, recall bias is possible where data are recorded retrospectively. It is therefore important to record this information accurately during pregnancy. Between 2 and 36% of women begin care after the first trimester. Given the importance of starting care early in pregnancy, this raises questions about whether the most vulnerable women in each country have access to appropriate health care. Using this indicator in conjunction with educational level and country of birth could provide a useful basis for comparing the ability of healthcare systems to provide access to care for all pregnant women.

REFERENCES

1. Hemminki E, Blondel B. Antenatal care in Europe: varying ways of providing high-coverage services. *Eur J Obstet Gynecol Reprod Biol.* 2001; 94(1):145-8.
2. Bernloehr A, Smith P, Vydelingum V. Antenatal care in the European Union: a survey on guidelines in all 25 member states of the Community. *Eur J Obstet Gynecol Reprod Biol.* 2005; 122(1):22-32.
3. Ceysens G, Mauroy M-C, Zhang WH, Alexander S. La consultation préconceptionnelle : pourquoi des adhésions diverses malgré un concept excellent ? *Rev Med Prenat*. 2012; 3:138-42.
4. Standards for maternity care 2008. http://www.rcog.org.uk/womens-health/clinical-guidance/standards-maternity-care.
5. Rowe RE, Magee H, Quigley MA, Heron P, Askham J, Brocklehurst P. Social and ethnic differences in attendance for antenatal care in England. *Public Health.* 2008; 122(12):1363-72.

Figure 5.6 Distribution of initiation of antenatal care after the first trimester of pregnancy in 2010



NOTE: Data from Latvia refer to 2nd and 3rd trimesters combined.

R15 MODE OF ONSET OF LABOUR

JUSTIFICATION

There is widespread concern about the high rates of obstetric intervention, including inductions and caesarean sections, during labour and delivery; there is also growing pressure by women to avoid their unnecessary use. In the year 2000, about half of all caesarean sections in the 15 EU member states were planned or undertaken before the onset of labour.[1] Although these decisions were taken in the belief that they would benefit mothers and their babies, they might have had unintended side effects and may have led to subsequent interventions in labour and delivery. There is no evidence that a high rate of induction of labour increases the risk of delivery by caesarean section, either among term or post-term deliveries,[2,3] provided, however, that they are undertaken in accordance with good practice guidelines.[4] Data about the onset of labour are essential to the interpretation of data about mode of delivery (see C10).

DEFINITION AND PRESENTATION OF INDICATORS

Mode of onset of labour is described by the numbers of babies (per 100 live births and stillbirths) born after spontaneous onset of labour, induced labour, and caesarean section, either planned or undertaken before labour. Countries differ in the ways that they classify caesarean sections. Some countries subdivide them according to whether they were undertaken before or during labour. Others use the subdivision into elective caesarean sections, which include all those planned before the onset of labour and thus include a few that take place after labour has started, and emergency or unplanned caesareans.

DATA SOURCES AND AVAILABILITY OF INDICATOR IN EUROPEAN COUNTRIES

Mode of onset was available for 25 countries or regions. Records from Spain come from Valencia, and include data about induction only. There were some inconsistencies with data provided about mode of delivery. For some countries, such as Lithuania and Scotland which record caesarean section as elective versus emergency, this is due to inclusion of emergency caesarean sections in the no-labour category in addition to elective caesareans. Other countries which use the classification of elective-vs-emergency do not collect data on whether emergency caesareans were done before labour. Data about mode of onset of labour were collected for singletons and twins and by gestational age; data were not collected for triplets in some countries, nor for cases with missing gestational age data. Accordingly, the numbers of total births differ slightly from those reported for indicator C10.

METHODOLOGICAL ISSUES IN THE COMPUTATION, REPORTING, AND INTERPRETATION OF THE INDICATOR

The definition of induction may vary between countries or even between maternity units within the same country, according to the use and timing of the procedures. In some places, induction includes the use of drugs for cervical ripening and oxytocin for induction. In other places, including Malta, Norway, England and Wales, and Scotland, artificial rupture of membranes is also included. These differences may have a significant impact on rates: in England, in the financial year 2010-11, labour was induced with oxytocics in 16.8% of cases, and in a further 4.5% by artificial rupture of the membranes alone.[5] There is also some uncertainty about whether these data include other uses of oxytocics, including for augmentation of labour. This misclassification can occur if augmentation is not recorded separately.

Countries also differ in the ways that they classify caesarean sections. Some subdivide them according to whether they were undertaken before or during labour. Others use the definition of elective caesarean section, which include all those planned before the onset of labour and

thus include a few that take place after labour has started. For example, the Scottish Audit of Caesarean Sections in 1994 explained that caesarean sections that had been scheduled as elective but were carried out as an emergency after the woman went into labour unexpectedly were still categorised as elective. This answer was intended to clarify why some elective caesareans were done at night as about 5% of all elective caesarean sections were undertaken between 18.00 and 9.00.[6]

RESULTS

Figure 5.7 shows that the rate of caesarean sections planned or undertaken before labour varied widely, ranging from under 7% in Finland and Iceland to over 17% in Italy, Estonia, Lithuania, Luxembourg, and Cyprus. Variations in the rate of induced labour were also wide, ranging from 6.8% in Lithuania and 8.3% in Latvia to 33.0% in Wallonia, with rates under 10% in the Baltic countries and the Czech Republic to over 27% in Brussels (Belgium), Malta, and Northern Ireland (UK). Only 3 of the 25 regions or countries for which complete data were available had spontaneous onset of labour in more than 75% of cases.

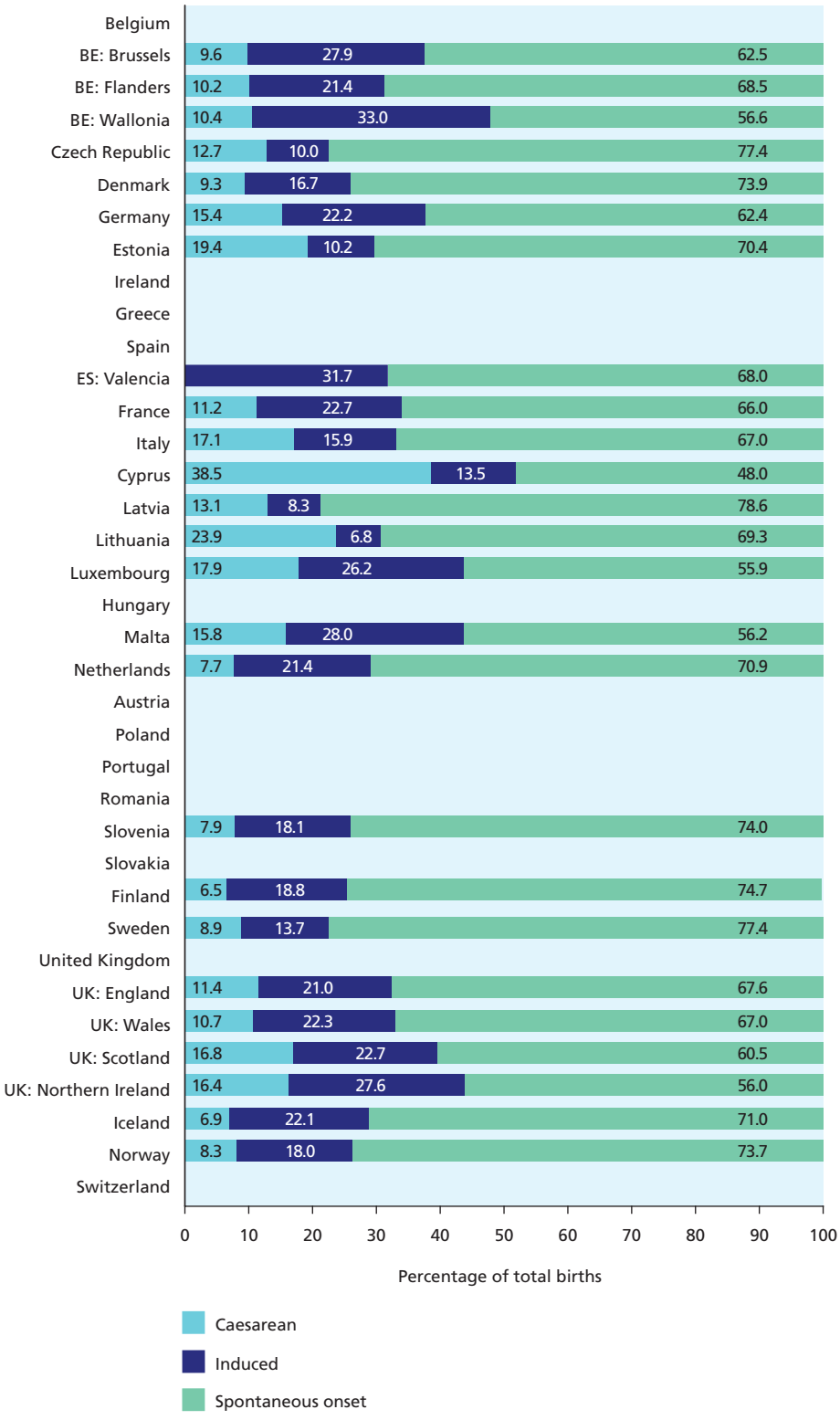
KEY POINTS

The fact that most countries record the onset of labour points to the importance attached to this indicator in Europe. The impact of the difference between caesarean section before labour and elective caesarean section seems small compared to the substantial differences between countries in their overall caesarean section rates. Decisions taken before labour about caesarean sections are therefore likely to have a strong influence on the overall rate, as there is no evidence in Figure 5.2 or elsewhere that high rates of planned or prelabour caesarean section are offset by low rates of caesareans during labour.[7] The definition of induction must be harmonised within and across countries, and induction and augmentation should be clearly distinguished to improve the rigour of comparisons between countries, especially in cases of inductions without well-established indications.

REFERENCES

1. Wildman K, Blondel B, Nijhuis J, Defoort P, Bakoula C. European indicators of health care during pregnancy, delivery and the postpartum period. *Eur J Obstet Gynec Reprod Bio*l. 2003; 111:S53-S65.
2. Gülmezoglu AM, Crowther CA, Middleton P, Heatley E. Induction of labour for improving birth outcomes for women at or beyond term. *Cochrane Database Syst Re*v. 2012; CD004945. doi: 10.1002/14651858.CD004945.pub3.
3. Nielsen PE, Howard BC, Hill CC, Larson PL, Holland RH , Smith PN. Comparison of elective induction of labour with favourable Bishop scores versus expectant management: a randomized controlled trial. *Matern Fetal Neonatal Med.* 2005; 18:59-64.
4. Le Ray C, Carayol M, Bréart G, Goffinet F for the PREMODA study. Elective induction of labour: failure to follow guidelines and risk of cesarean delivery. *Acta Obstet Gynecol.* 2007; 86:657-665.
5. Information Centre for Health and Social Care. NHS Maternity Statistics, England 2010-11. Leeds: Information Centre for Health and Social Care, 2011.
6. McIlwaine G, Boulton-Jones C, Cole S, Wilkinson C. Caesarean section in Scotland 1994/5: a National Audit. *J Adv Nurs.* 1998; 3;390-1.
7. Roman H, Blondel B, Bréart G, Goffinet F. Do risk factors for elective cesarean section differ from those of cesarean section during labor in low risk pregnancies? *J Perinat Med.* 2008; 36:297-305.

Figure 5.7 Distribution of mode of onset of labour in 2010



NOTE: Valencia in Spain did not have data on caesareans before labour.

R16 PLACE OF BIRTH BY VOLUME OF DELIVERIES

JUSTIFICATION

An indicator presenting data on the number of births per maternity unit is important for monitoring the impact of maternity reconfigurations and unit closures, which are occurring throughout Europe. Further, differences in the size of populations and population density affect the organisation of maternity services. There is also an ongoing debate about the association between the size of maternity units and quality of care, although it can be misleading when it ignores the types of care offered. In contexts where small units provide midwife-led care for women at low risk of obstetric complications within an organisation that has facilities for transfer to units providing the full range of obstetric care if complications arise, results appear positive; that is, there is a growing body of evidence that midwife-led units provide similar outcomes for babies combined with lower levels of obstetric intervention and morbidity for their mothers, compared with units offering obstetrician-led care.[1-3] However, these units depend on a well organised referral system as transfers during delivery for unexpected complications are common.[1]

On the other hand, the low volume of deliveries in very small units offering obstetric care may lead to suboptimal care for women with obstetric complications. For women and babies with complications, data about sizes of units should be interpreted in the light of information about regionalisation of care and arrangements for dealing with emergencies.[4,5] Very large units may offer better access to facilities for dealing with complications but may be unwieldy and impersonal. The concentration of births into larger units may also lead to longer travel time for pregnant women and thus possibly increase numbers of unintended out-of-hospital deliveries.[6,7] Units that provide care for a higher proportion of high-risk pregnancies may also mean more obstetric interventions for women without complications, although this has not been found everywhere.[1-3, 8-10] Other factors may be more important than size, however. For example, there is a tendency for intervention rates to be higher in the private sector, irrespective of hospital size.[11]

This indicator also includes information on home births. Although these are rare in most European countries, they are offered in the Netherlands and in the United Kingdom to women who are at low risk of complications.

DEFINITION AND PRESENTATION OF INDICATOR

This indicator describes the number of births occurring at home or in maternity units of various sizes and is defined by the total number of births in the same year at home, and in hospitals that had a total number of births in 2010 of less than 300, 300-499, 500-999, 1000-1499, 1500-1999, 2000-2999, 3000-3999, 4000-4999, or 5000 and over. These groups have been amalgamated in Figure 5.7 to illustrate the range of unit sizes. More detailed data on the distribution over the entire spectrum of unit sizes can be found in the summary tables in Appendix B. It was also possible to include births in an *other* category, which some countries used to classify births that take place in different types of structures. In the Netherlands and Switzerland, this category was used to describe midwife-led units.

DATA SOURCES AND AVAILABILITY OF INDICATOR IN EUROPEAN COUNTRIES

This information comes from birth registers, hospital discharge data, and perinatal surveys. Twenty-nine countries or regions provided data for this indicator. In the Czech Republic, data were provided for all units with 3000+ deliveries without distinction by size over this limit.

METHODOLOGICAL ISSUES IN THE COMPUTATION, REPORTING, AND INTERPRETATION OF THE INDICATOR

When data collection systems are hospital-based, home births may not be included, so they may be undercounted. In some countries, such as Portugal and the United Kingdom, private maternity units do not contribute to data collection systems, although up to now the private sector has been very small in the UK. In England, Scotland, and Northern Ireland, data from civil registration are a source of data for births occurring at home, but they do not mention the initial intentions of women who planned to give birth at home but transferred to hospital in labour. Where systems cover the entire population, this indicator should be readily available and of good quality but must be interpreted, within the context of the referral system and levels of care, which are specific to each country (see R14 and R17). For instance, obstetric units may differ substantially in the level of services for pregnant women and babies with complications and in the choices they provide for women, for example, the availability of midwife-led units on main hospital sites.

RESULTS

Figure 5.8 presents the distribution of births by number of births in the unit as well as the proportion of home births. Overall, few births occurred in maternity units with fewer than 500 births in 2010, but this varied considerably by country. In Cyprus, 61.9% of births took place in units of this size, while in 10 countries, from 10 to 20% of births did. In Flanders, Wallonia, Germany, and Switzerland, over half of all births took place in units with 500-1499 births, and over a third of births in a further 6 countries took place in units of this size. At the other end of the size spectrum, more than a quarter of births in Denmark, Sweden, and England took place in units with more than 5000 births, while Slovenia, Latvia, Scotland, and Ireland had even larger proportions of births in units with more than 5000 births; in 14 countries or regions, more than a third of births took place in units with 3000 or more births.

Many countries reported that less than 1% of births took place at home. In England, this figure was 2.7%, in Wales 3.7%, in Iceland 1.8%, and in Scotland 1.4%. In the Netherlands, where home births have been a usual option for women with uncomplicated pregnancies, 16.3% of all births occurred at home. This is, however, a substantial change from 2004, when this proportion exceeded 30%. Women in the Netherlands now also have the option of giving birth in a birth centre (a homelike setting) under care of the primary midwife; there are 26 birth centres in the country and 11.4% of births occurred in them (corresponding to the *other* category in Figure 5.7). Almost all birth centres are adjacent to or in hospitals. In many regions where women can choose such a centre, it is no longer possible to give birth in the hospital under the care of a primary midwife. The *other* category also refers to birthing homes in Switzerland.

CHANGES SINCE 2004

Figure 5.9 shows changes between 2004 and 2010 in the percentage of births occurring in maternity units with 3000 or more births per year. In most countries, with the exception of Finland, the Valencia region of Spain, and Spain as a whole, births in large maternity units rose over this period. In France, Denmark, and Northern Ireland, these changes were substantial in relation to the initial levels of births in large units.

KEY POINTS

The organisation of maternity services varies greatly throughout Europe. Data for this indicator are available in most countries and can thus be used to monitor trends over time, but other contextual information is needed to interpret data about births in small units.
Comparisons of health outcomes, health practices, and costs of care in these contexts would provide insights into the advantages and disadvantages of the diverse models of organisation found in Europe.

KEY REFERENCES

1. Birthplace in England Collaborative Group, Brocklehurst P, Hardy P, Hollowell J, Linsell L, Macfarlane A, McCourt C, Marlow N, Miller A, Newburn M, Petrou S, Puddicombe D, Redshaw M, Rowe R, Sandall J, Silverton L, Stewart M. Perinatal and maternal outcomes by planned place of birth for healthy women with low risk pregnancies: the Birthplace in England national prospective cohort study. *BMJ*. 2011; 343:d7400. doi: 10.1136/bmj.d7400.
2. Hatem M, Sandall J, Devane D, Soltani H, Gates S. Midwife-led versus other models of care for childbearing women. *Cochrane Database Syst Rev.* 2008; CD004667. doi: 10.1002/14651858.CD004667.pub2.
3. Hodnett ED, Downe S, Walsh D. Alternative versus conventional institutional settings for birth. *Cochrane Database Syst Rev.* 2012; CD000012. doi: 10.1002/14651858.CD000012.pub4.
4. Pilkington H, Blondel B, Papiernik E, Cuttini M, Charreire H, Maier RF, Petrou S, Combier E, Kunzel W, Breart G, Zeitlin J. Distribution of maternity units and spatial access to specialised care for women delivering before 32 weeks of gestation in Europe. *Health and Place*. 2010; 16(3):531-538.
5. Merlo J, Gerdtham UG, Eckerlund I, Håkansson S, Otterblad-Olausson P, Pakkanen M, Lindqvist PG. Hospital level of care and neonatal mortality in low- and high-risk deliveries: reassessing the question in Sweden by multilevel analysis. *Med Care.* 2005; 43(11):1092-1100.
6. Viisainen K, Gissler M, Hartikainen AL, Hemminki E. Accidental out-of-hospital births in Finland : incidence and geographical distribution 1963-1995. *Acta Obstet. Gynecol. Scand.* 1999; 78:372-378.
7. Blondel B., Drewniak N., Pilkington H., Zeitlin J. Out-of-hospital births and the supply of maternity units in France. *Health and Place.* 2011; 17(5):1170-1173.
8. Le Ray C, Carayol M, Zeitlin J, Bréart G, Goffinet F. Level of perinatal care of the maternity unit and rate of cesarean in low-risk nulliparas. *Obstet Gynecol.* 2006; 107(6):1269-77.
9. Tracy SK, Sullivan E, Dahlen H, Black D, Wang YA, Tracy MB. Does size matter? A population based study of birth in lower volume maternity hospitals for low risk women. *BJOG*. 2006; 113(1):86-96.
10. Hemminki E, Gissler M. Variation in obstetric care within and between hospital levels in Finland. *BJOG*. 1994; 101(10):851-7.
11. Coulm B, Le Ray C, Lelong N, Drewniak N, Zeitlin J. Obstetric interventions for low-risk pregnant women in France: do maternity unit characteristics make a difference? *Birth*. 2012; 39(3):183-191.

Figure 5.8 Distribution of births by maternity unit volume of deliveries in 2010

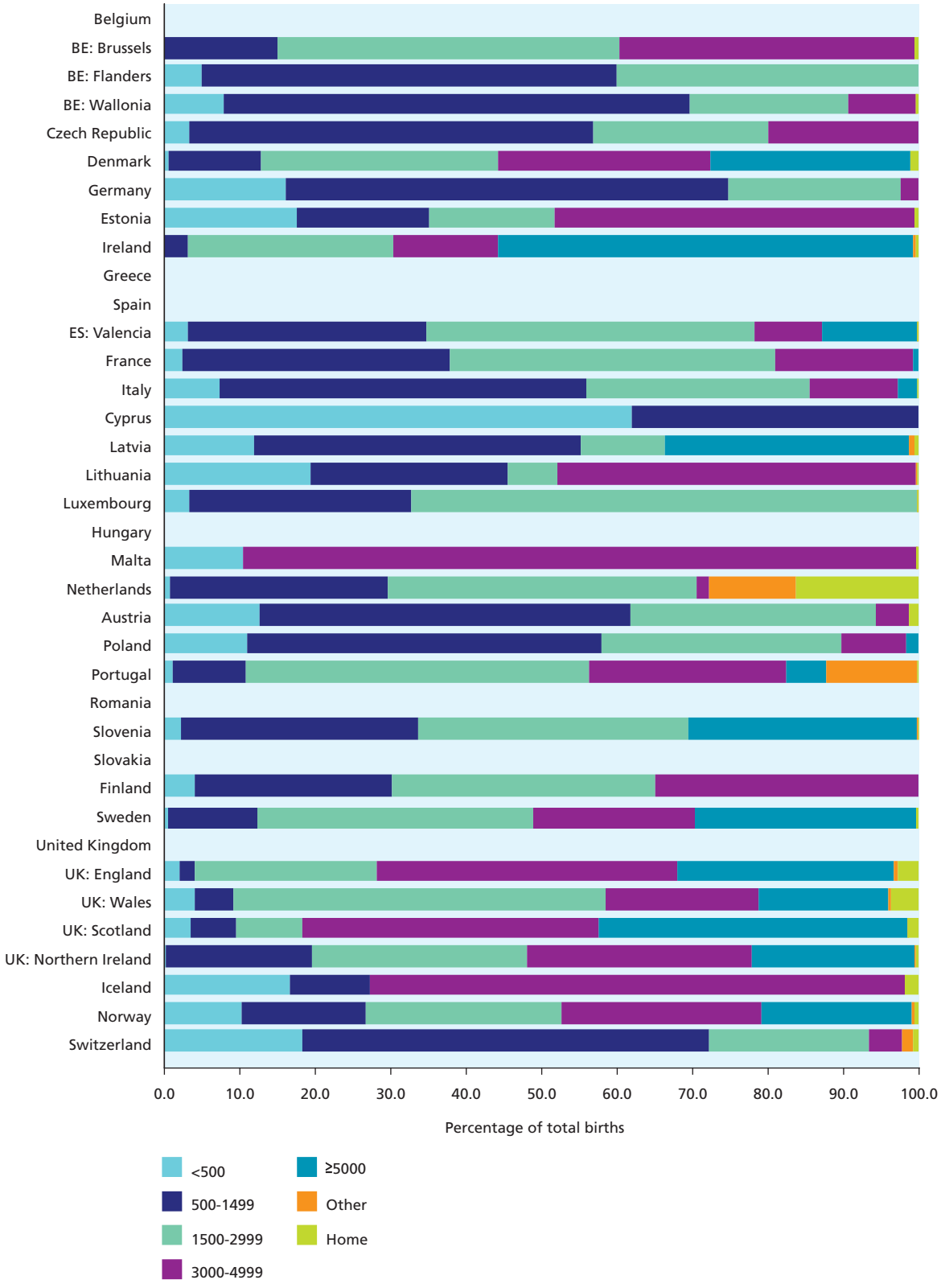
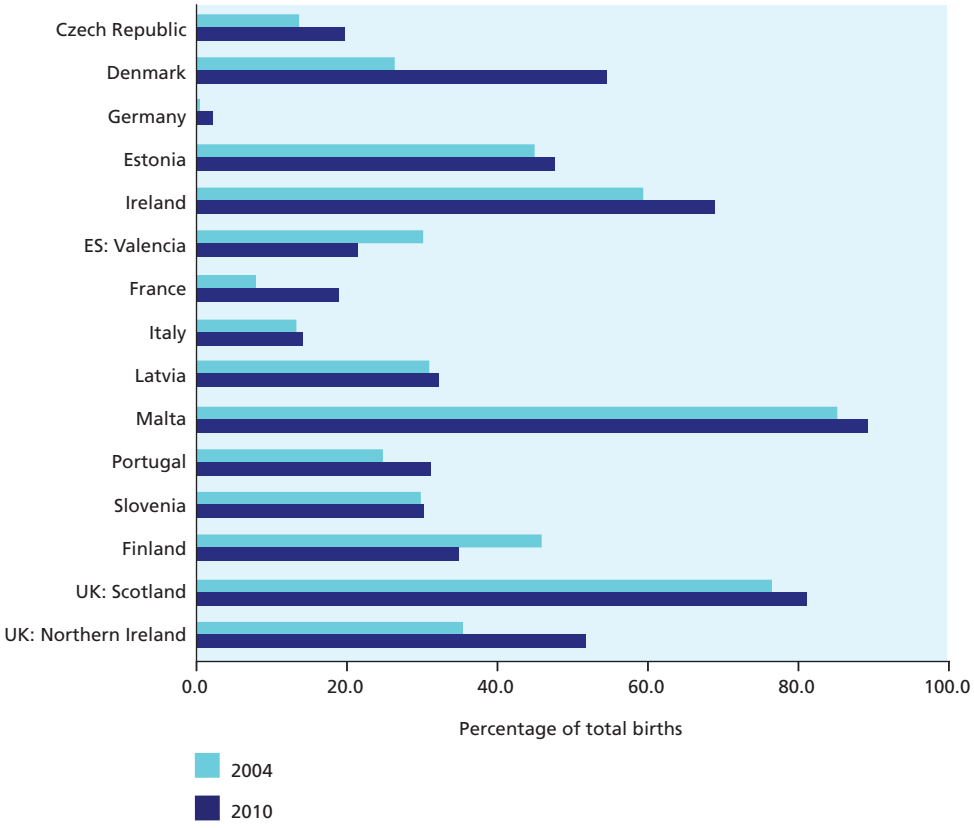


Figure 5.9 Percentage of births in units with 3000 or more births per year in 2004 and 2010



R17 VERY PRETERM BIRTHS DELIVERED IN MATERNITY UNITS WITHOUT AN ON-SITE NEONATAL INTENSIVE CARE UNIT (NICU)

JUSTIFICATION

About 1 to 1.5% of all births are very preterm, but these infants account for one third to one half of all neonatal deaths; between 5 and 10% of survivors develop cerebral palsy,[1] and babies without severe disabilities face risks of developmental, cognitive, and behavioural difficulties in childhood at least twice as high as babies born at or closer to term.[2] The delivery of these infants in maternity units with on-site neonatal intensive care (called level III units) is associated with lower mortality.[3,4] The organisation of care for these infants varies greatly in Europe, and these factors affect the proportion of deliveries that occur in these units.[5,6]

DEFINITION AND PRESENTATION OF INDICATOR

This indicator is defined as the proportion of all births (live born and stillborn) between 22 and 31 weeks of gestation delivered in units without an on-site NICU. Because there is no consensus definition of an "on-site neonatal intensive care unit", we collected and present these data based on local classifications of units.

DATA SOURCES AND AVAILABILITY OF INDICATOR IN EUROPEAN COUNTRIES:

Sixteen countries were able to provide some data about this indicator, although in the UK and Belgium, coverage was not national. The 2 principal reasons for this failure are: 1) there is no agreed-upon classification for maternity units, and it is thus impossible to know what type of care they provide to very preterm babies, and 2) data are unavailable. In Germany, for instance, there are 4 levels of care (Level I perinatal centre, which corresponds to level III internationally, Level II perinatal centre, obstetric unit with perinatal focus, other obstetric unit), but a breakdown of births by these centres is not at present available on a national basis. The situation is similar in Poland.

METHODOLOGICAL ISSUES IN THE COMPUTATION, REPORTING, AND INTERPRETATION OF THE INDICATOR

The principal difficulty in interpreting this indicator is the absence of a common definition of levels of neonatal care. While it is easy to agree on what constitutes a tertiary or regional centre with full neonatal intensive care facilities, many countries have intermediate levels of care which provide care to many, but not all, high-risk infants. These facilities are very heterogenous.

RESULTS

Table 5.1 provides information on the classifications of maternity units in European countries. This indicator makes it possible to determine whether countries have policies to define maternity units appropriate for the care of very preterm babies and whether information is routinely collected for evaluating these policies. Many countries have official classifications for specialised maternity units that provide on-site neonatal care. There is, however, significant variability in the classifications, especially the number of levels of care. In some countries, all maternity units appear to have a neonatal ward, but in others there are maternity units without on-site neonatal units. Some countries also have "intermediate" levels that provide some neonatal care for high-risk babies. Classifications of levels of care, even when they use similar labels (such as level I, II, and III), are probably not comparable, and the structures classified as most specialised undoubtedly have quite different characteristics in different countries.[6] This may explain in part the wide variation in the proportion of very preterm babies born in the highest level of care. This percentage ranged from about 20% to 100%.

KEY POINTS

Many, but not all, countries in Europe have clearly designated levels of care that make it possible to define specialised maternity units where high-risk babies should be born. Most of these countries also have data on their place of birth. The proportion of very preterm babies born in the most specialised units varies widely. It would be useful to develop a common European classification for maternity and neonatal units to facilitate monitoring the care of these high-risk babies. Whether these classifications exist or not, it is important for countries to be able to monitor where these high risk infants are delivered.

REFERENCES

1. Larroque B, Ancel PY, Marret S, Marchand L, Andre M, Arnaud C, Pierrat V, Rozé JC, Messer J, Thiriez G, Burguet A, Picaud JC, Bréart G, Kaminski M, for the EPIPAGE Study group. Neurodevelopmental disabilities and special care of 5-year-old children born before 33 weeks of gestation (the EPIPAGE study): a longitudinal cohort study. *Lancet*. 2008; 371(9615):813-20.
2. Bhutta AT, Cleves MA, Casey PH, Cradock MM, Anand KJ. Cognitive and behavioral outcomes of school-aged children who were born preterm: a meta-analysis. *JAMA*. 2002; 288(6):728-37.
3. Ozminkowski RJ, Wortman PM, Roloff DW. Inborn/outborn status and neonatal survival : a meta-analysis of non-randomised studies. *Stat Med*. 1988; 7(12):1207-21.
4. Kollée LA, Verloove-Vanhorick PP, Verwey RA, Brand R, Ruys JH. Maternal and neonatal transport: results of a national collaborative survey of preterm and very low birth weight infants in The Netherlands. *Obstet & Gynecol.* 1988; 72(5):729-32.
5. Van Reempts P, Gortner L, Milligan D, Cuttini M, Petrou S, Agostino R, Field D, den Ouden L, Børch K, Mazela J, Carrapato M, Zeitlin J, for the MOSAIC Research Group. Characteristics of neonatal units that care for very preterm infants in Europe: results from the MOSAIC study. *Pediatrics*. 2007; 120(4):e815-25.
6. Blondel B, Papiernik E, Delmas D, Kunzel W, Weber T, Maier RF, Kollée L, Zeitlin J, for the Mosaic Research Group. Organisation of obstetric services for very preterm births in Europe: results from the MOSAIC project. *BJOG*. 2009; 116(10):1364-72.

Table 5.1 Percentage of very preterm babies born in the most specialised units as defined by national classifications of levels of care in 2010

	Classifications of levels of care					
Country/coverage	**Lowest level**	**I**	**II**	**Highest level**	**Number of births 22-31 weeks GA (N)**	**% born in Highest level**
Belgium						
BE: Brussels			Level II	Level III (MIC NIC)	338	93.5
BE: Flanders			Level II	Level III	910	77.6
BE: Wallonia			Level II	Level III (MIC NIC)	314	83.4
Czech Republic	Other hospital		Intermediate care perinatal Centre	Regional perinatal centre	1236	82.1
Denmark						
Germany						
Estonia	General hospital	Specialised hospital	Central hospital	Regional hospital	200	22.5
Ireland						
Greece						
Spain						
ES: Valencia	Without NICU			With NICU	452	88.1
France	Level 1	Level 2A	Level 2B	Level 3	219	69.9
Italy	Maternity, no neonatal unit		neonatal unit	NICU	5833	83.1
Cyprus (2007)	Non-NICU			NICU	114	24.6
Latvia	Level I	Level II		Level III	256	44.1
Lithuania		Level IIA without NICU	Level IIB- regional	Level III-university	345	75.7
Luxembourg	Maternity without NICU			Maternity with NICU	92	63.0
Hungary						
Malta	Maternity without NICU			Maternity with NICU	41	97.6
Netherlands	Home	In hospital, under midwife supervision	Maternity without NICU	Maternity with NICU	2582	65.8
Austria						
Poland						
Portugal		Level II-private	Level II – Perinatal support hospital	Level III – Differentiated perinatal support hospital	893	92.5
Slovenia		Level 2 no NICU, all other facilities		Level 3 with NICU	335	91.0
Slovakia						
Finland	Other hospital	Regional hospital	Central hospital	University hospital	559	84.3
Romania						
Sweden						
United Kingdom						
UK: Scotland	Community maternity unit with medical support+ GP Obstetrics	Community maternity unit	Obstetrician + co-located midwife-led unit	Obstetrician-led unit	809	55.0
Norway	Home/planned delivery	Midwife-led unit	Emergency obstetric care unit	University hospital	687	69.3
Switzerland						

NOTES: MIC: maternal intensive care; NICU: neonatal intensive care unit;
Portugal - number of deliveries of a live birth, not known for private level I units;
Unplanned deliveries out of hospital have not been included in this table;
Data from Cyprus are from 2007, and data from Greece from 2009.
In Italy, data do not include spontaneous fetal deaths under 26 weeks of gestation or TOPs.

R18 EPISIOTOMY RATE

JUSTIFICATION

The aim of an episiotomy is to prevent severe perineal tears. Its use became more common in the first half of the 20th century, with the move from home to hospital births and the greater involvement of obstetricians in maternity care.[1] Policies of routine episiotomy were instituted in some settings, particularly in the United States and Latin America, but also in Europe. This policy was called into question by a midwife-led trial in West Berkshire, England, in the early 1980s[2,3] and by others conducted elsewhere.[1] The routine use of episiotomies has also been questioned by women who want a more "normal" birth.

A Cochrane review to assess the effects of restrictive compared with routine use of this procedure during vaginal birth concluded that restrictive episiotomy policies appeared to have a number of benefits compared to its routine use.[1] It therefore seemed appropriate to compare the rates of episiotomy in Europe (see also indicator R7).

DEFINITION AND PRESENTATION OF INDICATORS

This indicator is defined as the percentage of women who delivered vaginally and had an episiotomy.

DATA SOURCES AND AVAILABILITY OF INDICATORS IN EUROPEAN COUNTRIES

Most of the data came from hospital databases. Episiotomy data were available for 26 countries or regions. Many countries have no missing data, but some data providers noted that it is not possible to distinguish between missing information and no episiotomy.

RESULTS

As shown in Figure 5.10, episiotomy rates varied widely: roughly 70% of vaginal deliveries in Cyprus, Poland, Portugal, and Romania, 43-58% in Wallonia, Flanders, the Czech Republic, and Spain, 16-36% in Wales, Scotland, Finland, Estonia, France, Switzerland, Germany, Malta, Slovenia, Luxembourg, Brussels, Latvia, and England. Rates were lowest in Denmark (4.9%), Sweden (6.6%), and Iceland (7.2%).

Between 2004 and 2010, for countries where comparable data were available, as shown in Figure 5.11, episiotomy rates decreased in many countries except the UK and the Netherlands. In general, countries where episiotomy rates were higher in 2004 experienced decreases over this period, whereas those with increases had lower rates in 2004.

KEY POINTS

The wide variation in the use of episiotomy illustrates the variability in medical practices that exists between the countries in Europe and raises questions how scientific evidence is integrated into clinical decisions. Episiotomy rates have fallen or stayed the same in many countries with data from 2004, with the exception of England, Scotland, and the Netherlands.

REFERENCES

1. Carroli G, Belizan J. Episiotomy for vaginal birth. [Systematic Review] Cochrane Pregnancy and Childbirth Group. *Cochrane Database Syst Rev.* 2008; doi: 10.1002/14651858.CD000081.pub2.
2. Sleep J, Grant AM, Garcia J, Elbourne DR, Spencer JAD, Chalmers I. West Berkshire perineal management trial. *BMJ*. 1984; 289:587-90.
3. Sleep J, Grant AM. West Berkshire perineal management trial: Three year follow up. *BMJ*. 1987; 295:749-51.

Figure 5.10 Percentage of women who had episiotomies among women with vaginal deliveries in 2010

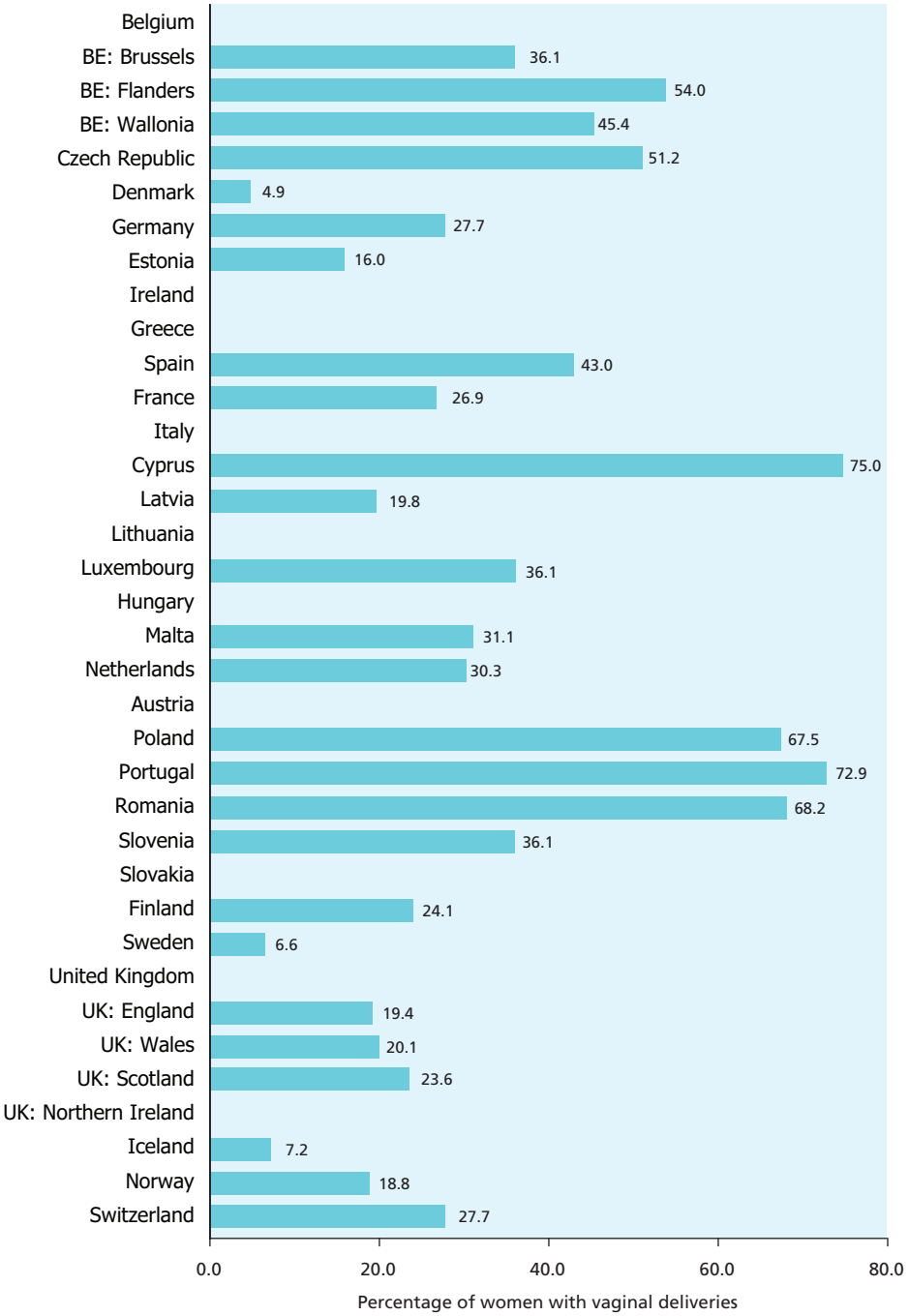
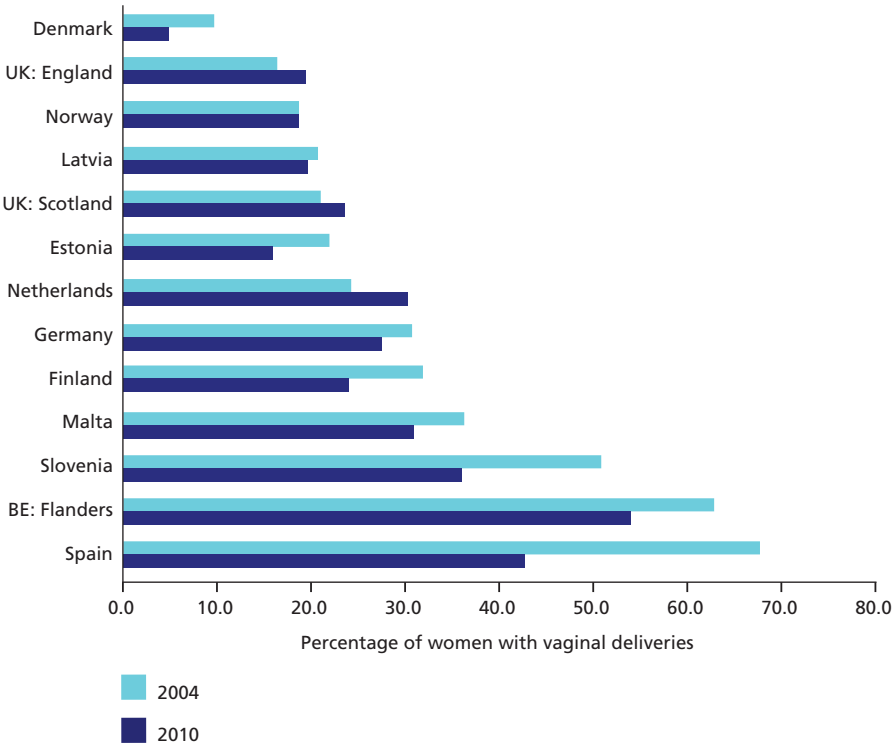


Figure 5.11 Episiotomy rates in 2004 and changes between 2010 and 2004 among women with vaginal deliveries



NOTE: Countries ordered by ascending episiotomy rates in 2004.

R19 BIRTHS WITHOUT OBSTETRIC INTERVENTION

(new indicator – to be published in October)

R20 BREAST FEEDING IN THE FIRST 48 HOURS AFTER BIRTH

JUSTIFICATION

Breast feeding is considered to provide benefits for mothers and babies including important nutritional advantages and improved resistance to infections for the latter. Breast feeding may also contribute to improved cognitive development and protect against chronic disease in adulthood.[1,2] Although recommendations about the length of time that breast feeding should continue vary substantially between and within countries, there is general agreement about its benefits for babies and thus about the importance of the initial postpartum intake.[3] Success of breast feeding during the first 48 hours after birth depends on public health policies and healthcare practices during pregnancy and in the immediate postpartum.[4-6]

DEFINITION AND PRESENTATION OF INDICATOR

Babies breast fed in the first 48 hours after birth are defined as: (i) the number of newborn babies who are exclusively breast fed (baby receives breast milk and is allowed to receive drops and syrups) or (ii) the number of newborn babies who receive mixed food (baby receives breast milk and is allowed any food or liquid including non-human milk), or it can be defined as its opposite (iii) the number of newborns who are not breast fed throughout the first 48 hours of age as a percentage of all newborn babies.[7]

Breast feeding in the first 48 hours after birth is presented as a percentage of all newborns. The summary table shows 3 percentages: percentage of babies who are exclusively breast fed, those who are mixed breast fed, and all babies who are either exclusively or mixed breast fed during the first 48 hours.

DATA SOURCES AND AVAILABILITY OF INDICATOR IN EUROPEAN COUNTRIES

Data on breast feeding at birth are available from 19 countries or regions, as shown in Figure 5.12; the Spanish data come from the Catalonia and Valencia regions. These data come mostly from population-based surveys and hospital discharge data, but some countries use health surveys after birth to collect these data. In Poland, data were obtained through a health survey in 2009, by home interviews. In Portugal, data were derived from a breastfeeding observatory that was set up recently and does not yet have widespread coverage; 55% of public hospitals are participating, and it covers term newborns from July 2010 to June 2011. In Switzerland, data come from the Baby Friendly Hospital Initiative and only include healthy term newborns in participating hospitals and birthing homes; the coverage rate is 38% of the live births and data refer to feeding during the hospital stay. In the UK, data for all 4 countries separately and for the UK as a whole came from the Infant Feeding Surveys carried out in 2005 and 2010. In the Netherlands, data came from a routine survey that asked only about exclusive breast feeding during the first 48 hours. In Poland, no distinction was made between exclusive and mixed feeding. Ireland provided data on type of feeding recorded at the hospital discharge or by a midwife attending a home birth.

METHODOLOGICAL ISSUES IN THE COMPUTATION, REPORTING, AND INTERPRETATION OF THE INDICATOR

There may be differences in the period of breast feeding considered, even though the indicator specified feeding status in the first 48 hours. As data were derived from birth register or hospital statistics, statistics refer to status before discharge and may vary by length of stay before discharge. France and Cyprus provided data on breast feeding collected from an interview in the postpartum ward, which was not precisely 48 hours after birth. It is unclear how these differences in the time period at which the data are recorded affect estimates of breast feeding at birth. In addition the meaning of exclusive vs mixed breast feeding may differ between countries, as the first 48 hours is a period when lactation is established and non-human milk may be given as a supplement in this period.

RESULTS

Figure 5.13 illustrates the large differences in rates of breast feeding in Europe. More than 90% of babies received some breast milk at birth in the Czech Republic, Latvia, Portugal, and Slovenia. Rates were lowest in France, Cyprus, Ireland, Malta, and Scotland. In countries with very high rates of breast feeding, exclusiveness varied: almost all babies are exclusively breastfed in the Czech Republic and Latvia, whereas in Portugal and Switzerland mixed feeding is more common. In Switzerland, data come from hospitals participating in the Baby Friendly Hospital Initiative, so these may be an overestimate of national rates. The last representative study, in 2003, found a breastfeeding rate of 94%.

Some countries that could not provide the data required for this indicator have other statistics which suggest high rates of breast feeding in the first 48 hours; in Denmark, in the first *European Perinatal Health Report*, it was reported that data on breast feeding were not collected because over 95% of all newborns were breast fed exclusively for at least the first 48 hours; in Estonia, 87% of infants under one year who are monitored in primary healthcare centres are breast fed for at least 6 weeks; in Hungary 97% of infants are breast fed at 3 months

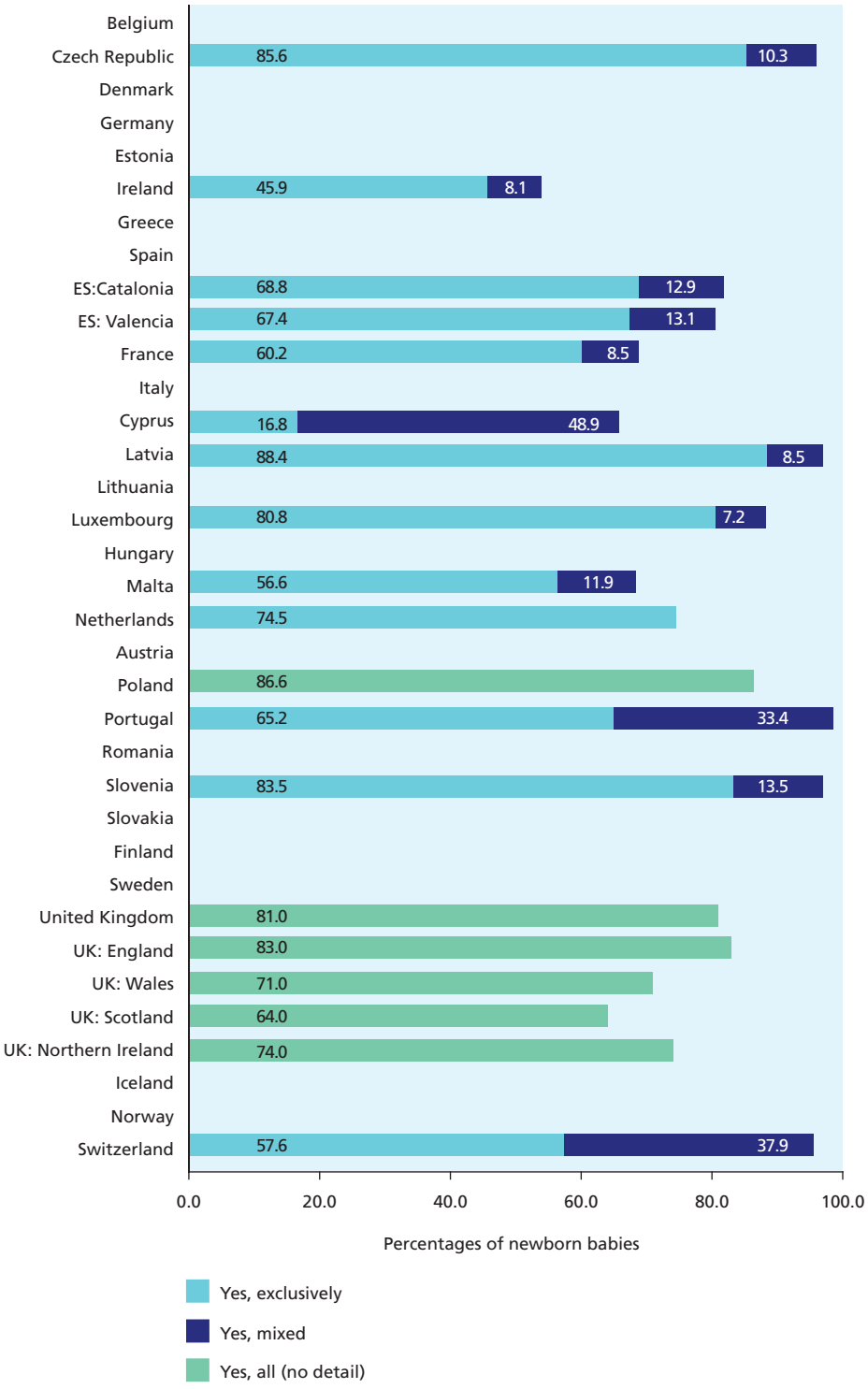
KEY POINTS

Many countries were unable to provide data on breast feeding, despite the importance of this indicator of child health and care at birth. When almost all newborns in a country receive some breast milk at birth, collecting data on that indicator during the first 48 hours may be less important. In those countries that provide data, rates of breast feeding in the first 48 hours and the distribution between exclusive and mixed breast feeding varied. These differences may show variations in the priority given to breast feeding in the public health policies; it can also express differences in the way data are collected, or differences in medical practices about the use of formula supplementation in the first days when there are maternal or infant problems.[7] Data collection in every country and greater precision and consistency in defining the modes of breast feeding are necessary to assess the efficacy of national policies and to know to what extent the recommendations in favour of breast feeding are achieved.[8]

REFERENCES

1. Ip S, Chung M, Raman G, Chew P, Magula N, DeVine D, Trikalinos T, Lau J. Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries. Evidence Report/Technology. Report 153. Rockville, 2007 http://archive.ahrq.gov/clinic/epcarch.htm.
2. Martens PJ. What do Kramer's Baby-Frendly Hospital Initiative PROBIT studies tell us? A review of a decade of research. *J Hum Lact*. 2012; 28:335-342.
3. Cattaneo A, Yngve A, Koletzko B, Guzman LR. Protection, promotion and support of breastfeeding in Europe: current situation. P*ublic Health Nutr.* 2005; 8:39-46.
4. WHO. Evidence for the ten steps to successful breastfeeding. Geneva 1998, WHO/CHD/98.9. (http://www.who.int/child_adolescent_health/documents/9241591544/en/index.html).
5. Yngve A, Sjöström M. Breastfeeding determinants and a suggested framework for action in Europe. *Public Health Nutr.* 2001; 4(2B):729-39.
6. Renfrew MJ, McCormick FM, Wade A, Quinn B, Dowswell T. Support for healthy breastfeeding mothers with healthy term babies. *Cochrane Database Syst Rev.* 2012; 5:CD001141. doi: 10.1002/14651858.CD001141.pub4.
7. Cattaneo A, Burmaz T, Arendt M, Nilsson I, Mikiel-Kostyra K, Kondrate I Communal MJ, Massart C, Chapin E, Fallon M, for the 'Promotion of Breastfeeding in Europe: Pilot Testing the Blueprint for Action' Project. Protection, promotion and support of breast-feeding in Europe: progress from 2002 to 2007. *Public Health Nutr.* 2010; 13:751-759.
8. Yngve A, Sjöström M. Breastfeeding in countries of the European Union and EFTA: current and proposed recommendations, rationale, prevalence, duration and trends. *Public Health Nutr.* 2001; 4(2B): 631-645.

Figure 5.12 Distribution of exclusive and mixed breast feeding for the first 48 hours in 2010



NOTES:
Cyprus: Perinatal Survey in 2007
The Netherlands, no data on mixed feeding
Poland: National Health Survey in 2009
Portugal: National breastfeeding registry which was set up recently; coverage rate: 55% of public hospitals; includes term newborns from July 2010 to June 2011
Switzerland: includes healthy term newborns in hospitals and birthing homes participating in Baby Friendly Hospital Initiative; coverage rate: 38%
UK: no question on mixed feeding, only intended mixed feeding