BIRTH IN EUROPE IN THE 21ST CENTURY

Entre Nous

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MAKING EVERY BIRTH WANTED, CELEBRATED AND SAFE

Katja Iversen

Every minute 250 babies are born around the world. In many instances it is a time of great celebration and joy. In some it can be a time of trouble, sorrow, and difficulty. The differences surrounding childbirth can be striking, even in contexts that appear similar.

In Europe, much of the public discussion surrounding pregnancy and childbirth focuses on the issues related to low birth rates and declining fertility. While it is true that the average number of children a woman in Europe will have is less than 2 and below replacement rates, trends in birth rates and the factors that contribute to both high and low fertility vary across the Region.

Evidence shows that in the majority of European countries declining fertility rates are not due to a lack of desire for children. The contributing factors are rather delayed childbearing due to educational attainment, lack of a 'suitable' partner, older age at onset of childbearing, limited family friendly services, as well as financial issues - all factors affecting family size. Understanding the factors that contribute to the gap between wanted family size and how many children people actually choose to have is a critical first step in enabling policy makers and governments to address the issue and develop the needed settings and family friendly policies, such as parental leave and financial subsidies, which are proven to be directly linked to fertility rates and the number of babies women choose to have.

However, birth is much more than rates and trends. As individuals and as a society it is also important to recognize and understand the complexities of factors that shape women's and their families' experiences of childbirth itself. We need to look at how women are able to access care, who is able to provide the care for them (midwife, family physician, obstetrician), where they can deliver (home, hospital or birth centres), the quality of the care they receive and the varying cultural or religious practices that influence the process of childbirth. Throughout Europe we are witnessing an increasing medicalization of birth – for example, lack of choice on where and how to deliver, increasing rates of cesarean section – which tend to make childbirth an overly technical procedure rather than an emotional, joyous experience. While we of course want specialized medical care and adequate interventions available to ensure appropriate care and positive outcomes for high risk and complex pregnancies and births, there is a danger - and an economic loss - in applying practices that are required for complex pregnancies and birth when it is not medically necessary. Luckily many European countries are working to negate this trend by promoting midwifery lead care, mother friendly hospitals with room for family and the breastfeeding friendly hospital initiative.

The WHO Regional Office for Europe has, in partnership with other UN agencies, Governments and civil society organizations, been working throughout the Region to ensure that childbirth is as positive an experience as possible. Training workshops (theoretical, practical, clinical), dissemination of tools and training materials and encouraging countries to share their experiences are some of the many ways in which the WHO Regional Office is supporting this important work. The upcoming 4th Women Deliver Conference (www.wd2016.org), to be held in Copenhagen May 16-19 2016 will provide an exciting opportunity for the WHO, as well as other key European actors to share their contributions in this area, as well as broader SRH issues for girls and women, in relation to the new post 2015 Sustainable Development Goals.

As you read through the articles in this birth issue of Entre Nous, I would suggest that you take time to pause, reflect and remember this: choice is key and it is a human right of women and couples to be able to choose if and how many children they want and when they want them. Often the best childbirths are those where women and their families have choices to have the kind of birth they want. I have no doubt that all of the Member States in the WHO European Region share this notion and this goal and that they are working together to ensure that in every country all childbirths will be wanted, safe and celebrated. Women deliver – and not only babies. They deliver for themselves, their families, their communities and their countries. It is time for countries to deliver for them.

Katja Iversen,
CEO,
Women Deliver

BIRTH IN THE WHO EUROPEAN REGION:
AN INTERVIEW WITH DR GUNTA LAZDANE, PROGRAMME MANAGER, SEXUAL AND REPRODUCTIVE HEALTH PROGRAMME, WHO REGIONAL OFFICE FOR EUROPE

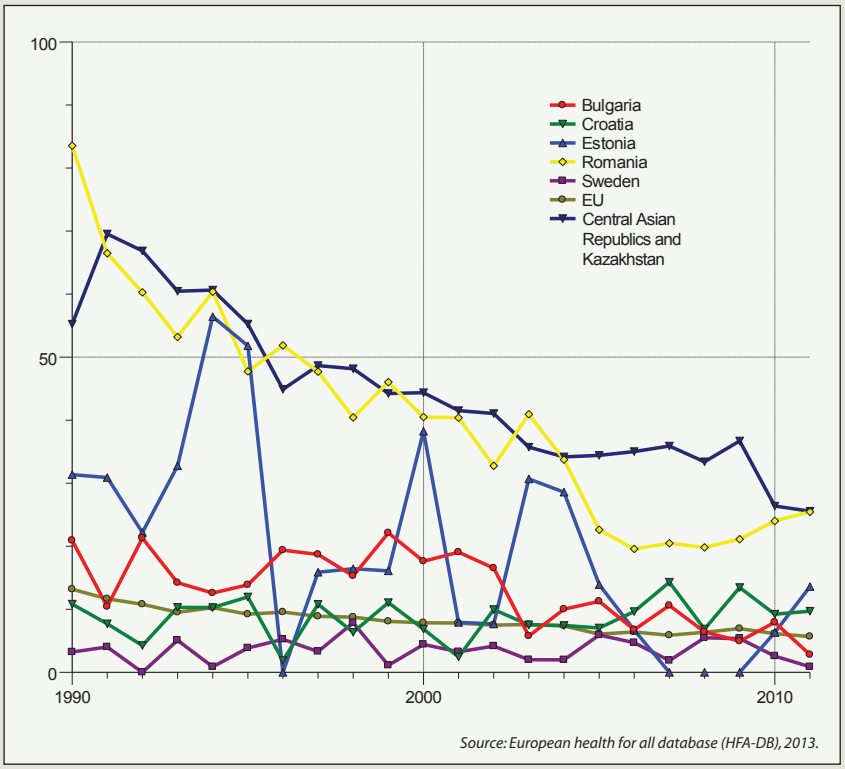
The following interview was conducted by Lisa Avery, Editor, Entre Nous.

The European Region is very diverse. How is this diversity reflected in relationship to the issue of birth in Europe?

With 53 Member States in the WHO European Region there is significant diversity present. What is so interesting, is that this diversity is not just present in economic, cultural, political and religious spheres, but also in the practices, perspectives and attitudes towards birth. For example, some countries have a much more technological, industrial approach to birth, where medical interventions, such as cesarean section, continuous fetal monitoring and ultrasound are used unnecessarily. Certain women and their families actually consider it to be a reflection of an elite status if you deliver your baby at a tertiary care hospital, even if it was not needed. On the other hand you have countries where birth is seen as much more natural, where policies attempt to promote mother and baby friendly approaches, such as home delivery with midwives (when appropriate), interventions are kept to a minimum, breastfeeding is promoted and clinical and practical guidelines actually embrace a life course approach. Obviously there is also variation on these approaches within countries and among women.

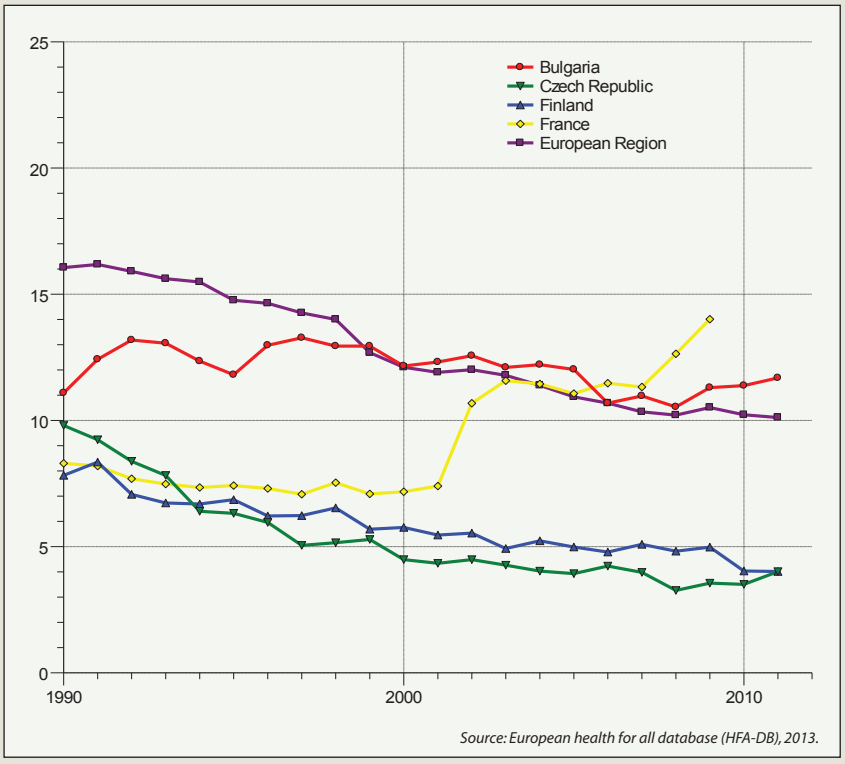
This diversity is also reflected in the inequalities we see in maternal and newborn health in the Region as well. Overall Europe is very fortunate in that its maternal mortality ratio (MMR) and perinatal mortality rate (PMR) are relatively low in comparison with other regions of the world, but we do see significant variation in these indicators (see figures 1 and 2) and we do have countries that will not reach the Millennium Development Goal (MDG) 5A of a three quarter reduction in maternal mortality between 1990 and 2015. This same variation is also seen when we look at total fertility rates (TFR) for the Region (see figure 3).

Figure 1. Maternal mortality per 100 000 live births in the WHO European Region and selected European Union (EU) countries, 1990-2011.



Source: European health for all database (HFA-DB), 2013.

Figure 2. Perinatal deaths per 1000 births in WHO European Region and selected EU countries, 1990-2011.



Source: European health for all database (HFA-DB), 2013.

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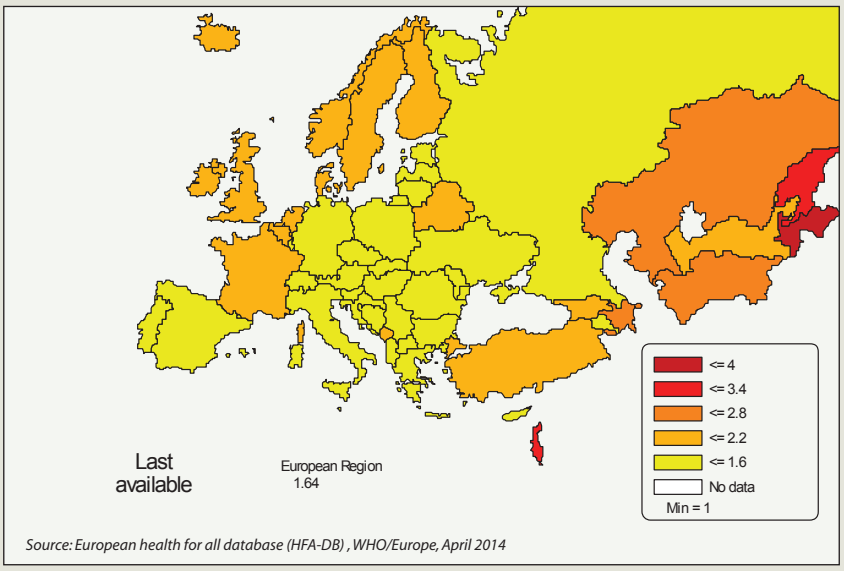
Figure 3. Total fertility rate.



Source: European health for all database (HFA-DB) , WHO/Europe, April 2014

What are some of the Region's biggest challenges in relations to birth in Europe?

The same social, political, religious, cultural and economic factors that are linked to the enormous diversity that we see in relation to birth in Europe are also linked to some of the biggest challenges we see with birth as well. For example, fetal sex selection is a growing problem for countries in Europe and several countries are witnessing an increase in this practice. The WHO has been working alongside other UN agencies and with countries to help address the wider socio-cultural –economic determinants that are at the root cause of this serious issue. The inter-agency statement on preventing gender-biased sex selection available at http://www.who.int/reproductivehealth/publications/gender_rights/9789241501460/en/, is an important tool to help highlight the far reaching implications of this practice and determine effective solutions to the problem that move beyond a health systems only approach.

Some people may also suggest that the low fertility rate in Europe is a challenge, but I find this a particularly interesting topic. It is true that the TFR of 1.64 poses challenges from a demographic perspective in terms of a declining population due to a low birth rate and the potential negative consequence that this can bring, especially in terms of sustainability of social security systems. However, if the low birth rate is in fact a reflection of women and men actively choosing to have fewer children, and not a result of external forces that have affected ability to reproduce, such as unsupportive policies on pregnancy and employment, then, what we are actually witnessing with a declining birth rate are the core principles of the 1994 International Conference on Population and Development in action. This is very positive as it means that men and women are choosing when, how and if to have children. However, the question of how much external factors affect our choices, either consciously or unconsciously and how this effects TFR remains a topic of further research.

Perhaps one of the biggest surprises to me was discovering how low the breastfeeding rates in Europe are (see Table 1). This was quite shocking. We actually have the lowest rates of breastfeeding of all the WHO Regions. I feel quite strongly that given these findings, this topic very clearly needs to be given higher priority on the policy agenda in Europe. Something that our work on breastfeeding has also shown us is the continuing gap that exists for data on many indicators related to birth in Europe. Data is simply not available for many parameters – this is also the case for unmet need for family planning and other MDG 5B indicators. This lack of data is definitely a significant challenge for improving reproductive health in the Region – without the appropriate data or analysis we are not able to fully comprehend the underlying issues to help improve and strengthen birth and birth experiences for everyone.

Over the last 10-20 years what have been the biggest changes you have experienced with regards to birth in Europe?

Perhaps one of the biggest changes has been that of the increasing age of women at time of first pregnancy and childbirth. Presently every fifth baby is born to a mother who is age 35 or older, which is a big change from before. There are many positives to this scenario – with increased maternal age it is more likely that women and their partners will have completed education, have employment and be able to really plan and discuss desires around childbearing. At the same time, we know that fertility and pregnancy at later ages have their own risks as well – often greater than if pregnancy were to occur at a younger age. For example, over the age of 40 the life risk of noncommunicable diseases (NCD) is much higher and female fertility decreases significantly over the age of 37, leading to an increased likelihood of possible need for assisted reproduction.

Another big change has been that of the increasing rates of cesarean section (see figure 4). The rates have been steadily rising in all countries, but of course the speed at which they are increasing and the driving factors behind the increase vary in each context. Recently the WHO has begun the process of reviewing and revising its original statement on acceptable rates of cesarean section and this has raised very important discussions around if women should have the right to electively choose to deliver via cesarean section and the maternal and fetal benefits and risks, as outlined further in the article on pages 8-9. This is clearly a very charged topic.

BIRTH IN THE WHO EUROPEAN REGION:
AN INTERVIEW WITH DR GUNTA LAZDANE, PROGRAMME MANAGER, SEXUAL AND REPRODUCTIVE HEALTH PROGRAMME, WHO REGIONAL OFFICE FOR EUROPE

(CONTINUED)

Table 1. Breastfeeding rates, Europe.

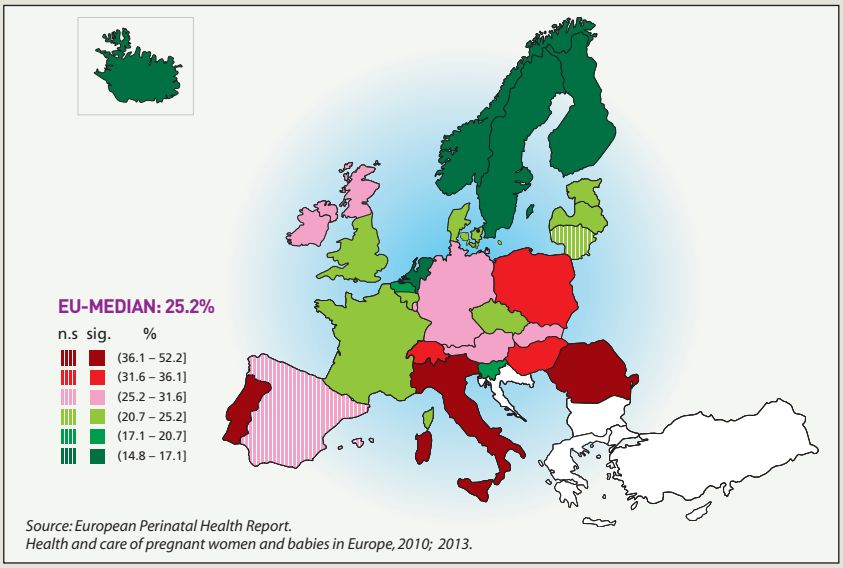
	Breastfeeding within 1 hour after birth (%)	Exclusive breastfeeding at 6 months (%)	Continued breastfeeding at 1 year (%)	Year of data collection
Albania	42.9	-	60.6	2008–2009
Armenia	35.7	-	44.2	2010
Austria	78.1	10.0	16.0	2006
Azerbaijan	31.9	-	26.4	2006
Belarus	53.0	-	27.9	2012
Belgium	-	11.8	-	2012
Bosnia and Herzegovina	42.3	-	12.4	2006/2011–2012
Bulgaria	4.6	-	-	2010
Croatia	-	-	-	2011
Cyprus	-	12.4	-	2004
Czech Republic	-	17,8	-	2011
Denmark	-	17.2	-	2012
Finland	-	1.0	-	2011
Georgia	66.3	-	36.5	2009
Germany	-	-	-	2003–2006
Greece	-	0.7	6.4	2009
Hungary	-	43.9	-	2007
Iceland	-	13.0	16.0	2011
Ireland	33.5	-	-	2008
Israel	-	11.2	11.8	1998–1999
Italy	-	5.0	12.0	1999
Kazakhstan	67.8	-	50.8	2010-2011
Kyrgyzstan	83.8	-	68.3	2012
Latvia	-	16.4	22.4	2011
Luxembourg	66.5	6.0	11.8	2008
Malta	-	35.9	-	2004–2005
Montenegro	25.2	-	24.6	2005
Netherlands	-	18.0	-	2010
Norway	-	7.0	-	2003
Poland	-	-	40.0	2013
Portugal	-	34.0	-	2003
Republic of Moldova	61.0	-	48.0	2012
Romania	12.0	-	-	2004
Serbia	7.6	-	18.4	2005–2006/2010
Slovakia	-	49.3	-	2010
Spain	-	28.5	-	2011–2012
Sweden	-	14.0	-	2011
Switzerland	-	-	-	2003
Tajikistan	49.6	-	1.3	2012
The former Yugoslav Republic of Macedonia	21.0	-	33.8	2011
Turkey	39.0	-	66.7	2008
Turkmenistan	-	-	72.0	2009
Ukraine	65.7	-	37.9	2012
United Kingdom	-	1.0	-	2010
Uzbekistan	67.1	-	78.3	2006

-, no data; EBF = Exclusive breastfeeding

No data for Andorra, Estonia, France, Lithuania, Monaco, Russian Federation, San Marino and Slovenia.

Source: Breastfeeding practices and policies in WHO European Region Member States - submitted and accepted for publication.

Figure 4. Caesareans as a percentage of all births in 2010.



Source: European Perinatal Health Report. Health and care of pregnant women and babies in Europe, 2010; 2013.

The past 20 years have also seen significant increase and improvement in the type, availability and use of technology related to birth and the achievements have been tremendous. For example, due to new and improved neonatal interventions for preterm birth, we are now seeing neonatal survival at very early gestational ages, just a bit over 22 weeks of gestation. This would have once been considered impossible. The same can be said of assisted reproductive techniques –couples are now able to conceive that would not have been able to decades ago. Of course we all recognize that having these new technologies available does affect choices, outcomes and attitudes towards birth. This raises an interesting philosophical dilemma of if any limits should be placed and if so, which ones and how.

One of the other big changes I have seen is that of the increasing obesity epidemic. Ten percent of all childbearing women are now obese. This brings new challenges for all involved with pregnancy and birth. We know that obesity is linked to increased risk of pre-existing co-morbidities, such as diabetes, hypertension and cardiovascular disease, but it is also linked to increased risk of infertility and complications of pregnancy and risk of NCD in the fetus later in life.

How is the WHO Regional Office for Europe working with Member States to strengthen the experience of birth for women, families and their communities?

We work with all the 53 Member States, but there are selected countries that we have been more active in supporting through various technical activities at the country's request. Our approach varies depending on the need, but include activities such as the introduction, training and implementation of:

- Beyond the Numbers, an approach to maternal mortality and morbidity analysis that improves access to quality care;
- Effective Perinatal Care training and implementation of specific quality of care monitoring tools such as the *Assessment tool for the quality of outpatient antepartum and postpartum care for women and newborns* and the *Hospital care for mothers and newborn babies quality assessment and improvement tool*;
- promotion and adoption of the breastfeeding hospital initiative at a country level;
- sexuality education and improvement of the quality of family planning services ;
- policies and known approaches to prevent pretem birth;
- assessment and planning at the national and regional level; and
- promotion of the rights of women and their families to choice, access and quality care.

There has been incredible political commitment to improving the health of women and their families in all our Member States and it has been a pleasure to work with different countries who are all trying to do their very best with different approaches and resources.

In your opinion, what have been some of the greatest successes/ achievements around birth that have occurred in Europe?

This is perhaps the most difficult question to answer as there is much to be proud of.

One of the greatest achievements has been that overall the attitude towards pregnant women has really improved, especially from health providers. There has been a real shift from a paternalistic approach to a much more respectful collaboration that actively engages women as part of decision making during pregnancy and birth. This is wonderful to see. Of course there is still room for improvement in many situations, but it is incredibly positive to see this shift happen. There have also been great changes and improvements where quality of care is concerned – not only from the technological side of clinical standards, guidelines and techniques, but also from the equally important dimensions of patient/ client satisfaction and their perspective and experience of care. I also think that the sharing between countries of both successes and failures in approaches to improve and strengthen pregnancy and birth has been a huge achievement. It is these kinds of collaborations and exchanges of knowledge that ultimately allow all of us to learn the best way forward to ensure that this incredibly important moment in women and their families lives is recognized and supported.

CAESAREAN SECTION OR VAGINAL DELIVERY IN THE 21ST CENTURY

Until the 20th Century, caesarean section (C/S) was a feared operation. The ubiquitous classical uterine incision meant high maternal mortality from bleeding and future uterine rupture. Even with aseptic surgical technique, sepsis was common and lethal without antibiotics. The operation was used almost solely to save the life of a mother in whom vaginal delivery was extremely dangerous, such as one with placenta previa. Foetal death and the use of intrauterine foetal destructive procedures, which carry their own morbidity, were often preferable to C/S.

With the advent of Munro Kerr's lower-segment uterine incision and the discovery of antibiotics in the second half of the 20th century, the safety of C/S improved dramatically. As maternal risk dropped, C/S gained routine use for foetal indications. Debates arose as to how small a level of foetal risk warranted the maternal risk of C/S; and routine C/S for breech presentation, for example, became commonplace.

Modern refinements in C/S technique have improved safety further. Regional anaesthesia, antibiotic chemoprophylaxis, oxytocin, secondary ebolics, crystalloid resuscitation and blood transfusion have reduced mortality and morbidity to very low levels. As C/S has become safer, tolerance for foetal risk during labour has decreased and C/S rates have increased dramatically around the world. The average C/S rate in 24 OECD countries in 2011 was 26% and it was over 40% in Turkey, Mexico and Brazil. C/S is now so safe that some affluent women are being offered and are seeking elective C/S without indication. The downstream effects of this are only beginning to be appreciated. In the United States, for the first time in history, maternal mortality and morbidity are increasing (1).

Maternal Risks

Maternal mortality and morbidity is approximately five times greater with caesarean than with vaginal birth: specifically, the risks of hemorrhage, sepsis, venous thromboembolism and amniotic fluid embolism. The absolute risk of death with C/S in high and middle-resource settings is between 1/2000 and 1/4000 (2, 3). In subsequent pregnancies, the risk of placenta previa, placenta accreta and uterine rupture is increased. These conditions increase maternal mortality and severe maternal morbidity cumulatively with each subsequent C/S. This is of particular importance to women having large families.

Maternal Benefits

C/S has a modest protective effect against urinary stress incontinence later in life (4). Approximately 10% of women who have delivered vaginally will have moderate to severe urinary stress incontinence compared with 5% of women who have delivered by C/S: a reduction of 5%, meaning 20 C/S would need to be performed to prevent one case of moderate to severe urinary incontinence.

Neonatal Morbidity and Mortality

C/S can be a life-saving operation for a foetus in jeopardy. Paradoxically, however, countries with higher C/S rates now have higher rates of neonatal morbidity and mortality. Iatrogenic late preterm and early term deliveries carry a significant risk of neonatal pulmonary complications, particularly for infants born by C/S without labour. Compliance with recommendations to delay pre-labour C/S until 39 weeks gestation is variable and iatrogenic prematurity remains a significant cause of neonatal morbidity and mortality. A higher rate of stillbirth in pregnancies after C/S also contributes to an increase in perinatal mortality.

Childhood Considerations

Transition from sterile foetal life to newborn life involves rapid epithelial colonization with micro-organisms. Contact with the maternal vagina during labour and maternal skin post-partum exposes the foetus to the normal maternal microbial flora. The maternal immune system has a symbiotic relationship with this microbiome. Maternal immune globulins are transferred antenatally, trans-placentally to the foetus, preparing the foetus to adopt its mother's microbiome. C/S interferes with neonatal exposure to maternal vaginal and skin flora, leading to colonization with other environmental microbes and an altered microbiome. Routine antibiotic exposure with C/S likely alters this further.

Microbial exposure and the stress of labour also lead to marked activation of immune system markers in the cord blood of neonates born vaginally or by C/S after labour. These changes are absent in the cord blood of neonates born by pre-labour C/S. Immunological diseases including asthma, atopic dermatitis and celiac disease are more common in children born by pre-labour C/S compared with those exposed to labour. The mechanisms through which C/S may cause these differences are not well understood; however, optimal establishment of the early microbiome and priming of the neonatal immune system appear to have long-term effects on childhood health. Animal studies suggest that disruption of this process has negative direct and epigenetic effects on later metabolism and immune system function (5).

Indications for C/S

Analyzing indications for C/S is difficult. Labour is a dynamic process involving varying levels of risk and many foetal, placental and maternal factors. Clinician and maternal preference also play an increasing role in decisions about delivery.

In 1996, Michael Robson published an innovative system to classify C/S. Birthing women are grouped into ten mutually exclusive groups based on objective, routinely recorded obstetrical parameters. The number of women in each group is recorded as well as the C/S rate for each group, allowing groups with high C/S rates to be identified, as well as their contribution to the overall C/S rate based on the size of the group. This system has been used to analyze C/S rates around the world, revealing a wide variation in rates, but common themes (6). In high-resource settings, most C/S are performed in three groups of birthing women:

Andrew Kotaska

parous women with a history of a prior C/S; nulliparous women in spontaneous labour; and nulliparous women being induced. Efforts to reduce C/S rates using the Robson Ten Group Classification System typically concentrate on these three groups (7).

Reasons for increasing C/S rates:

For decades, the WHO has specified 15% as the ideal C/S rate, yet rates around the world keep climbing. Many factors are responsible, including:

- Decreasing tolerance for foetal risk (e.g. routine C/S for breech presentation);
- Decreasing tolerance for perineal trauma (C/S instead of forceps delivery);
- Over-estimation of risk with labour after prior C/S (decreased VBAC rates);
- Lack of access to doula support in labour;
- Loss of obstetrical skills among obstetricians (vaginal breech; operative vaginal delivery; vaginal twin delivery);
- Use of electronic foetal monitoring without access to foetal scalp sampling (C/S for false positive atypical or abnormal foetal heart rate);
- Increasing maternal obesity;
- Increasing induction of labour (convenience, avoidance of post-dates risk);
- Increasing use of epidural analgesia with inadequate labour augmentation;
- Maternal preference (scheduling, fear, avoidance of labour, convenience); and
- Obstetrician preference (scheduling, income generation).

Reducing C/S rates

With so many factors at play in modern obstetrics, the concept of an "ideal" C/S rate seems outdated. Among OECD nations, only Holland and Scandinavia maintain C/S rates near 15%. However, C/S carries greater risk and cost than vaginal birth; and efforts to safely avoid unnecessary cesareans are warranted from the perspectives of beneficence and justice.

Currently, many women desiring a vaginal birth who could achieve one deliver instead by C/S. Those with a breech foetus, a deep transverse arrest, or a history of a prior C/S often do not have access to an obstetrician or setting that can or will provide a vaginal birth. Although the presence of a doula in labour reduces the chance of C/S, few women around the world have access to one. Instead, epidural analgesia, which interferes with the progress of normal labour, is used ever more frequently. Maternal obesity increases the risk of C/S; and average or excessive weight gain during pregnancy in obese women increases that risk further. Improvement in labour management has the potential to avoid C/S by confirming abnormal electronic foetal monitoring and assiduously augmenting women laboring with epidural analgesia before resorting to surgical delivery.

Although C/S solely based on maternal choice occurs, it accounts for a small portion of the overall C/S rate. Within the bounds of maternal autonomy, there is opportunity in many jurisdictions to reduce the number of C/S.

Summary

In 21st century high-resource settings, C/S has become safe enough to allow a rapid expansion in accepted indications and a dramatic increase in its frequency. The reasons for this increase are multifactorial. For many, C/S provides a relatively safe way of avoiding small degrees of foetal and/or maternal risk. For others, compared with the effort required for vaginal birth, elective C/S has become an easy way out - an efficient, predictable, if expensive means of delivery.

It is clear that C/S can be life-saving; however it is also clear that many unnecessary caesareans are performed. Compared with vaginal delivery, C/S involves increased maternal risk, financial cost and sometimes foetal risk. Most women desire a normal vaginal birth. We have an ethical duty to help them achieve one.

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References

1. Kuklina E, Meikle S, Jamieson D et al. Severe obstetric morbidity in the United States: 1998-2005. *Obstet Gynecol* 2009;113(2 Pt 1): 293–299.
2. Villar J, Carroli G, Zavaleta N et al. Maternal and neonatal individual risks and benefits associated with caesarean delivery: multicentre prospective study. *BMJ* 2007;335:1025
3. Landon MB, Hauth JC, Leveno KJ et al. Maternal and perinatal outcomes associated with a trial of labor after prior cesarean delivery. *N Engl J Med* 2004;351:2581-9.
4. Rortveit G, Daltveit A, Hannestad Y et al. Urinary incontinence after vaginal delivery or cesarean section. N Engl J Med 2003;348:900-7.
5. Cho CE, Norman M. Cesarean section and development of the immune system in the offspring. *Am J Obstet Gynecol* 2013;208:249-54.
6. Brennan D, Robson M, Murphy M et al. Comparative analysis of international cesarean delivery rates using 10-group classification identifies significant variation in spontaneous labor. *Am J Obstet Gynecol* 2009; 201:308.e1-8.
7. Robson M, Scudamore I, Walsh S. Using the medical audit sycle to reduce cesarean section rates. *Am J Obstet Gynecol* 1996;174:199-205.

BORN TOO SOON: PRETERM BIRTH IN EUROPE TRENDS, CAUSES AND PREVENTION

Background

It is estimated that15 million babies annually are born too soon, which is before 37 completed weeks of gestation and that this number is rising (1). Complications of preterm birth are the leading cause of death among children less than 5 years of age and this accounted for nearly one million preventable deaths in 2013 (1). The United Nations Millennium Development Goal (MDG) 4 targeted a two-thirds' reduction of under five deaths by 2015 and recommended interventions to prevent preterm birth and to improve survival for preterm newborns (2). While infant and maternal mortality rates have witnessed some improvements, the burden of mortality and morbidity in the perinatal period remains a major concern (3). This is due in part to the high number of births per year, the young age of the maternal and infant population harmed by adverse perinatal events and the long-term sequelae of adverse pregnancy events such as very preterm birth or severe hypoxia (4).

Consequences

Preterm babies are concurrently low birth weight, are more likely to die and to have long-term neurological and developmental disorders than those born at term (5). The incidence of these complications has increased in many countries, reflecting limited achievements in preventing high risk situations, compared with the medical advances that have reduced mortality for these infants. Though low resource countries are disproportionately affected by preterm birth, middle and high resource countries in Europe also have to face the challenges of increasing preterm birth rates (2).

Trends

The rate of preterm birth in Europe is rising steadily (3). From over 5 million births annually the estimated preterm birth rate in Europe varies from 5 to 10% (4). Lack of standardization in classification in registration of births and deaths and misclassification of stillbirths and neonatal deaths make it difficult to compare mortality at early gestations (4). Foetal, neonatal and infant mortality rates vary widely between the countries of Europe as some countries use the 24 week cut of point while others prefer to use the broader WHO classification of 28 weeks. However, preterm babies born before 28 weeks of gestational age constitute over one-third of all deaths, but data are not comparable between countries. About one-third of all foetal deaths and 40% of all neonatal deaths were of babies born before 28 weeks of gestational age.

Figure 1. Rates of preterm birth in Europe (6).

Table 1. Rates of preterm birth from 1996 to 2008 in 19 European countries

Country: region/area	All live births					Singleton live births					Multiple live births				
	n (2008)	1996 %	2000 %	2004 %	2008 %	*n* (2008)	1996 %	2000 %	2004 %	2008 %	*n* (2008)	1996 %	2000 %	2004 %	2008 %
Austria	77 720	9,1	10,0	11,4	11,1	75 066	7,9	8,4	9,4	8,7	2 654	58,2	67,5	74,6	77,8
Belgium: Flanders	69 187	7,0	7,8	8,1	8,0	66 672	5,2	6,0	6,3	6,2	2 515	51,7	55,9	60,4	57,3
Czech Republic	119 455		5,4	7,7	8,3	114 722		4,2	6,0	6,3	4 733		42,3	52,7	57,5
Estonia	16 031	5,5	5,9	5,9	6,2	15 506	4,9	5,1	4,9	4,6	525	38,5	46,2	47,6	51,0
Finland	59 486	5,8	6,1	5,6	5,5	57 767	4,5	4,7	4,4	4,3	1 719	46,5	49,4	44,5	47,5
France*	14 696	5,4	6,2	6,3	6,6	14 261	4,5	4,7	5,0	5,5	435	40,5	48,2	44,3	42,1
Germany: 3 Länder	215 634		8,8	9,2	9,0	208 383		7,0	7,2	7,0	7 251		61,7	61,8	64,2
Ireland	75 246		5,4	5,5	5,9	72 589		4,5	4,4	4,3	2 657		41,8	42,3	49,9
Lithuania	31 287	5,3	5,3	5,3	5,9	30 510	4,5	4,6	4,5	4,7	777	41,3	42,6	42,7	49,4
Malta**	4 152		6,0	7,2	6,7	4 020		5,0	5,8	5,3	132		39,5	51,7	50,0
the Netherlands	175 160	7,8	7,7	7,4	7,4	168 829	6,2	6,0	5,7	5,7	6 331	51,1	47,5	48,2	50,6
Norway	60 744	6,4	6,8	7,1	6,7	58 674	5,3	5,4	5,5	5,3	2 070	43,4	43,9	49,2	48,3
Poland	414 480	6,8	6,3	6,8	6,6	404 452	6,1	5,5	5,8	5,5	10 028	43,1	44,0	50,2	51,2
Portugal	103 597	7,0	5,9	6,8	9,0	100 705	6,1	4,9	5,4	7,4	2 892	45,9	49,6	54,9	63,5
Slovakia	53 624	5,1	5,4	6,3	6,8	52 227	4,4	4,5	5,2	5,6	1 397	40,3	46,3	49,8	52,2
Slovenia	21 816	6,0	6,8	7,0	7,4	21 050	4,8	5,1	5,2	5,4	766	54,1	57,4	55,4	62,3
Spain	417 094	7,1	7,7	8,0	8,2	400 474	6,2	6,3	6,4	6,3	16 620	42,2	50,4	53,0	53,9
Sweden**	108 865	6,1	6,4	6,3	5,9	105 799	5,0	5,2	5,2	4,8	3 066	44,1	43,4	45,2	43,3
UK: Scotland	58 275	7,0	7,4	7,6	7,7	56 423	5,8	6,1	6,3	6,1	1 852	53,1	51,6	55,5	55,0

* Data from France come from a nationally representative sample of births, and the years are 1995, 1998, 2003, and 2010
**2009, instead of 2008 data

Preterm birth rates have increased across most countries in the years from 1996 to 2008 and for 2008 ranged from a low of 5.5% in Finland to a high of 11.1% in Austria (Figure 1) (6).

Causes

With advances in technology, medical care can now be provided to the most vulnerable mothers and babies. At the margins of viability technologies have been developed that can be used to sustain life, however the survival rate at this gestation

Figure 2. Approaches to prevent preterm birth and reduce deaths among premature babies (1).

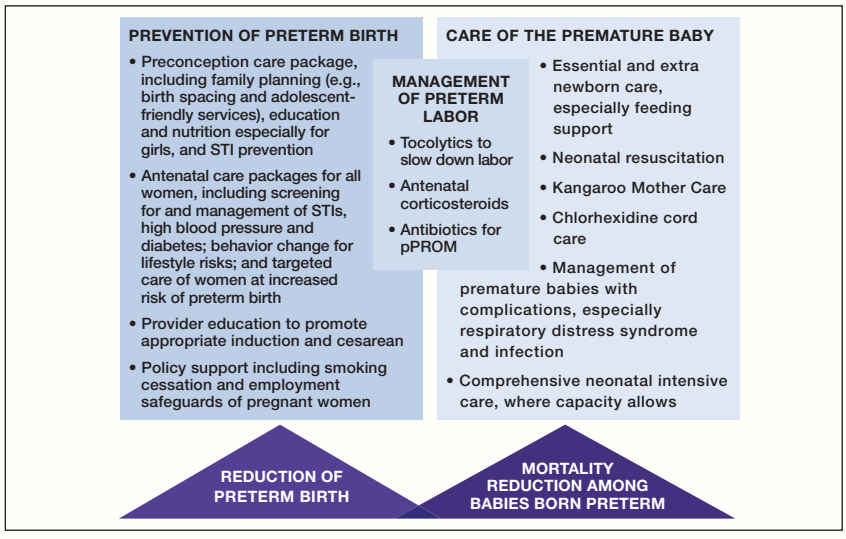


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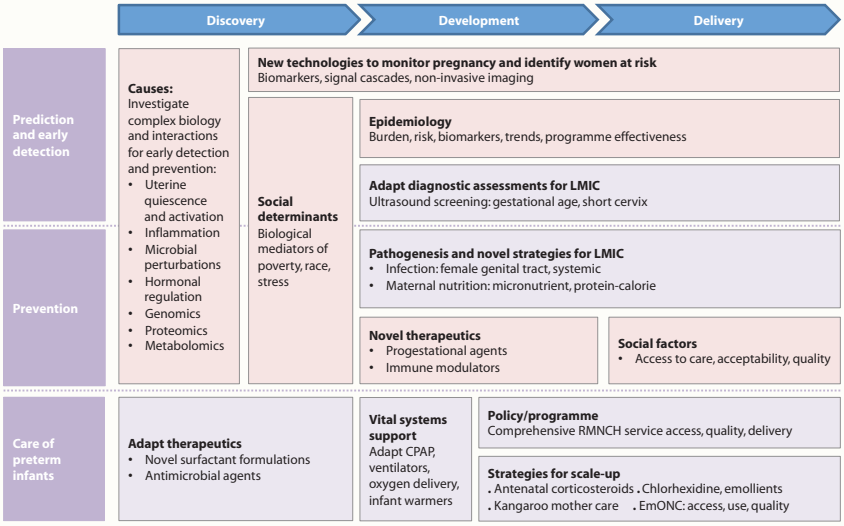
Figure 3. Research framework and pathway for preterm birth (8).



remains at 50% and the long term morbidities for these infants are very high (7). There have been many suggestions for the increase in preterm birth rates including: assisted fertility resulting in an increase in the multiple birth rate; delayed fertility, with concurrent advanced maternal age; and comorbidities such as obesity, hypertension and gestational diabetes requiring early delivery. This is separate to the myriad of factors that affect the incidence and outcomes of preterm birth in low resource countries.

Prevention

The WHO in conjunction with other global stakeholders has made preterm birth a key priority in the post MDG era. In 2013 the Born Too Soon strategy was launched and placed the issue of preterm birth to the fore of public health policy (1). Figure 2 briefly outlines the major strands of this policy, i.e. prevention of preterm birth, management of preterm labour and the care of the premature infant.

The provision of skilled birth attendants, universal antenatal care, the recognition and treatment of antenatal infection, the reduction of risk factors all help in the prevention of preterm birth. Kangaroo mother care and breastfeeding help with the care of preterm newborns. The challenge in low and middle resource countries is in the implementation of these strategies. However, there is still much that remains unknown about the causes of preterm birth so setting research priorities is a key feature addressed by expert groups led by Bill and Melinda Gates Foundation, Global Alliance to Prevent Prematurity and Stillbirth and March of Dimes among others (8).

Conclusion

Preterm birth remains the single biggest cause of neonatal death globally and is the second biggest cause of all deaths under 5 despite a reduction in mortality over the past two decades (8). A concerted global effort is needed to scale up evidence based strategies to low and middle resource countries and to drive research to improve outcomes for all preterm babies regardless of place of birth (Figure 3).

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References

1. *Born too soon: the global action report on preterm birth.* Geneva: WHO, 2012.
2. Simmons LE RC, Darmstadt GL, Gravett MG. Preventing Preterm Birth and Neonatal Mortality: Exploring the Epidemiology, Causes, and Interventions. *Semin Perinatol* 2010 34:408-15.
3. Blencowe H CS, Oestergaard MZ, Chou D et al. National, regional, and worldwide estimates of preterm birth rates in the year 2010 with time trends since 1990 for selected countries: a systematic analysis and implications. *Lancet* 2012;379:2162–72.
4. Zeitlin J, Mohangoo A, Delnorn M et al. *European Perinatal Health Report. The health and care of pregnant women and babies in Europe in 2010.* 2013.
5. Stoll BJ, Adams-Chapman I, Fanaroff AA et al for the National Institute of Child Health and Human Development Neonatal Research Network. Neurodevelopmental and Growth Impairment Among Extremely Low-Birth-Weight Infants With Neonatal Infection. *JAMA* 2004;292(19):2357-65.
6. Zeitlin J SK, Drewniak N, Mohangoo A et al. Preterm birth time trends in Europe: a study of 19 countries. *BJOG* 2013, 120:1356–65.
7. Larroque B, Ancel P-Y, Marret S et al. 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.
8. Lackritz EM, Wilson CB, Guttmacher AE et al. A solution pathway for preterm birth: Accelerating a priority research agenda. *Lancet Global Health* 2013;1(6):e328-e30.

PATHWAYS TO STRENGTHENING MIDWIFERY IN EUROPE

Introduction

A re-examination of midwifery in Europe is timely. Recent evidence demonstrates that midwifery is key to the survival, health and well-being of women, infants and families in all countries and settings (1, 2). Improved outcomes include reduced maternal and neonatal morbidity and mortality, stillbirth, low birth weight, fewer adverse clinical outcomes and fewer inappropriate clinical interventions. Other benefits of midwifery include increased breastfeeding, improved psycho-social outcomes and more efficient use of health services. Having universally available midwifery services offers scope to reduce health inequalities. An evidence-based framework for quality maternal and newborn care has recently been published to guide health system and education planning and provision (1).

Examining ways to strengthen midwifery and thereby improve outcomes for women and infants is of particular relevance in the light of changes in the childbearing population in Europe. These include growing poverty and social inequalities, increased migration, more older mothers and more women using artificial reproductive technologies, all of which result in more complex disease profiles. High-quality midwifery care has much to contribute to this challenging picture.

Variations in midwifery across Europe

The International Confederation of Midwives (ICM) has established international standards for midwifery education. However, midwifery across the 58 European countries, with their diverse history, culture and health systems, is very varied and these standards are often not met (3, 4). Prior to the 2005 Bologna declaration obliging European Union (EU) countries to offer degree-level midwifery education, a vocational-based education was common across much of central Europe. In some countries outside of the EU this remains the case and in countries with degree-level education standards vary considerably.

The Nordic countries provide positive examples of strong midwifery practice. Midwives are the primary care providers and woman-centred care is characterized by a reciprocal relationship within a positive birthing atmosphere (5). Lower caesarean section rates are one important outcome; Finland, Sweden, Norway and Iceland all have rates below 18%. However, even where midwifery is strongly integrated into the health system in both community and hospital settings, midwifery can struggle to withstand over-medicalization. The Netherlands has a well-established community midwifery system, but a greater focus on hospital-based care has seen home birth rates fall. Geographical variation within countries and inter-institutional variations in caesarean section rates indicate barriers to midwifery that result in a limited scope of midwifery practice. Midwifery is perhaps especially weak in parts of central and eastern Europe. In Hungary and the Czech Republic, for example, some midwives have received prison sentences despite conforming to the international scope of midwifery practice.

As a consequence of this variation, data on workforce and outcomes can present a confusing picture. For example, there is an inconsistent relationship between the number of midwives per 1000 live births (range 4.5 [Slovenia] to 60.9 [Sweden]) and outcomes such as maternal and neonatal mortality, or caesarean section rates.

Case studies

The Russian Federation, Italy and the United Kingdom (UK) have similar numbers of midwives per 1000 live births and the great majority of women in all three countries are cared for in the state-run health system. We examined the health system environment in which midwives work in these countries to illuminate the different ways in which midwifery is implemented and to identify strategies needed to strengthen midwifery and improve care. Table 1 shows some of these countries' key indicators. Table 2 (on pages 14-15) presents brief national profiles, describing some key factors including education, regulation and scope of practice. The information has been drawn from published material and from first-hand experience of working in these countries.

Table 2 demonstrates a wide interpretation of the scope of a midwife's practice. In the UK, a strong regulatory and education framework is in place. This enables midwives to work as autonomous practitioners in a range of settings, although many still work in settings where traditional hierarchies persist and limit midwives' full potential. In Italy midwifery could perhaps be best described as a

Table 1: Key indicators for three case study countries.

Country	Live births (2013)[1]	MMR (2013)[2]	NMR (2011)[2]	Caesarean Section (%)[2]	Mother's Index Rank (of 178 countries) [where 1=best][3]	Midwives per 1000 live births[4]
Italy	514 308	4	2	37.8	11	30.3
Russian Federation	1 901 182	24	6	18.0	62	40.1
UK	782 089	8	3	23.7	26	44.2

Sources: (1) UN Statistics Division, (2) WHO Global Health Observatory, (3) Save the Children 2014 State of the World's Mothers, (4) UN Population Prospects 2010 Revision.

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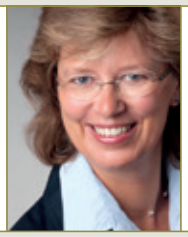

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semi-profession, while in Russia midwifery lacks a strong educational or regulatory system. In all three settings there are challenges to be addressed from over-medicalized approaches to care, which results in risk-based assessment systems and the routine use of unnecessary interventions. Most importantly, these case studies show that women, infants and families in countries with weak midwifery systems lack the skilled and compassionate care of a health professional who works in partnership with women and who is able to promote the normal processes of pregnancy, birth, postpartum and the early weeks of life (1).

Lessons learned from current health systems

The experience of several European countries indicates that midwifery can indeed make a real difference to the lives of women and infants. However, the potential of midwifery in Europe is constrained by barriers that include limitations on the scope of practice, weak professional regulation, over-medicalized health systems, commercialization, unsupportive environments, fragmented health services, not implementing evidence-based policy and practice and the low status of women. These barriers limit development of the whole health system and expose individual midwives to risk if they practice outside the constraints imposed. Professional territorialism that blocks midwifery's development hardly seems defensible when the consequences are to limit access of women and babies to care that will make a difference.

Strategies to strengthen midwifery in Europe

National and international leadership by policy makers, health system planners and health professionals is needed to ensure that high quality midwifery care is available to all women and infants.

Essential strategies to overcome barriers include:

- **Implementing appropriate standards of education**
  - to be able to provide women and infants with skilled, compassionate care during pregnancy, childbirth and the early weeks after birth, midwives need to be educated to international (ICM) standards. This includes a student-centred approach to learning which values the development of problem solving, reflexivity, and critical thinking skills. This will require improved education programmes for midwifery educators.
- **Support for qualified midwives to practice within a health system**
  - where they are integrated into multi-professional teams with strong multi-professional leadership, working in partnership with other professionals including obstetricians, paediatricians and family physicians, as well as maternity support workers.
- **A strong system of professional regulation to monitor standards of education and practice**
  - both to protect the public from inappropriate care and to enable the full scope of midwifery practice.
- **Strong professional leadership to support midwifery and a strong professional association to safeguard standards.**
- **Tackling the predominant over-medicalized, risk-based approach through implementing evidence-based practice across maternal and newborn health services**
  - this should include educating the multi-professional team to understand and optimize the normal processes of pregnancy and birth.
- **Clearly describing any limitations to midwives' scope of practice when examining comparative data on outcomes**
  - definitions of the type of midwifery practice (e.g. meeting international standards or not) and the type of maternal and newborn care system in place (e.g. woman-centred, evidence-based, over-medicalized) would help to interpret data on outcomes.
- **Educating and engaging midwives in research**
  - this will both increase the relevant evidence base and strengthen midwives' leadership skills and ability to challenge positively.
- **Involving women and advocacy groups in the planning and monitoring of services to keep the core focus on the needs of women, infants and families.**

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References

1. Renfrew MJ, McFadden A, Bastos MH et al. Midwifery and quality care: findings from a new evidence-informed framework for maternal and newborn care. *Lancet* 2014; 384:1129-1145.
2. Homer CSE, Friberg IK, Bastos Dias MA et al. The projected effect of scaling up midwifery. *Lancet* 2014; 384:1146-1157.

Table 2: Case studies of key factors in care by midwives* in three European countries: Italy, the Russian Federation and the United Kingdom.

	ITALY	RUSSIAN FEDERATION	UNITED KINGDOM
Midwifery education	University level: 3-year BSc - direct entry or post nursing *Regulation of education* Medical personnel regulate curricula. No moderation from outside midwifery or medical lecturers of theory, assessment or practice. *Access* MCQ exam - nothing specific about pregnancy and childbirth. No interview. Curricula: theory Didactic education model. Obstetricians and allied medical clinicians deliver much of the taught material. Midwifery lecturers exist but teach within a didactic model and assess students using MCQs and exams. *Curricula: practice* No formal mentorship arrangement in placements. However, practice is assessed by a midwife who has worked some hours with student using an assessment grid to evaluate and document the student's knowledge, skills, or attitudes. Practice may include a placement within the community - although in the community midwives mainly do paperwork, cervical screening, sometimes antenatal classes, they usually run a breastfeeding clinic once a week. They assist gynaecologists during antenatal visits. No homebirth service is available. No home visit after birth.	Two routes: 4-year course for those who have completed 9 classes (equivalent to UK GCSE): 3-year course for those who have completed 11 classes (equivalent to UK A level). Exit with a Diploma in Midwifery. *Regulation of education* No external moderation; for example, no external monitoring of theory, assessment or practice from outside midwifery or medical lecturers. Medical personnel regulate curricula. *Access* Apply to medical schools where a set number of places are available without fee per year. Students additional to the quota can be accepted for a fee ($2,000-4,000/yr.). Every year the subject for the entry test is defined by the Department of Education. For example, in 2014, the topic was chemistry. For 2015, it will be biology. The same exam is used for every healthcare profession, including medical students. Applicants are also required to undertake a literacy test in Russian. *Curricula: theory* Didactic education model. Obstetricians and allied medical clinicians deliver much of the taught material. Midwifery lecturers teach within a didactic model and assess students using an annual exam and regular MCQ tests following lectures. Curricula: practice No mentorship arrangement in placements: students observe practice in large groups led by obstetricians. They cannot deliver a baby. No clinical competency model. No formal practice assessment. No documentation to demonstrate knowledge, skills, or attitudes.	University level: 3-year degree or 18 months post-nursing. *Regulation of education* Education standards set and monitored by Nursing and Midwifery Council (NMC) meet international (ICM) standards. *Access* Strong admissions procedures, appropriate academic and personal qualifications required. *Curricula: theory* Student centred learning approach. Students taught predominantly by experienced midwives with educational qualifications. *Practice* Structured clinical experience in hospital and community settings with identified clinical mentors, close monitoring and regular clinical and academic assessment. Documentation required to assess competence. Final year students are assessed on their ability to caseload a selected group of women through pregnancy, birth and postpartum.
Professional status, regulation and scope of practice	By law, the midwife is an autonomous practitioner (in line with ICM scope of practice). In practice however, this is only in name in the state system. Can practice independently, but without insurance. Antenatal care delivered by obstetricians: midwives only assist. Obstetrician the lead clinician for all women during labour and birth. Midwives have no medicine prescribing rights and are not allowed to make key decisions (i.e. to admit or discharge a woman from hospital).	No role as an autonomous practitioner. Officially only permitted to work in state Polyclinics (antenatal care) or Roddoms (intrapartum care), under medical instruction. Homebirth is now outlawed. Antenatal care delivered by obstetricians: midwives only assist. Postpartum care managed by obstetrician and nurse who does baby check. Some illegally attend women at homebirth.	The lead named healthcare professional for healthy women during pregnancy and childbirth. Strong statutory role as autonomous practitioner, protected by legislation and by regulation by Nursing and Midwifery Council. Midwifery practice in hospitals, community and home settings, including home birth, and in midwifery-led settings including alongside units (inside hospital) and freestanding units (separate from hospital). However scope of practice limited for those practicing in some hospitals where traditional hierarchies persist. Midwifery is practiced almost exclusively in the state-run (NHS) system. All women have free access to midwifery care in this system. Small numbers of midwives offer private independent midwifery care. Understaffing is a problem, aggravated by the increased birth rate and more complex caseload.

	ITALY	RUSSIAN FEDERATION	UNITED KINGDOM
Women's advocacy and engagement	Currently there is no evidence that women are actively engaged in activities or initiatives to alter the status quo in maternity care provision.	Currently there is no evidence that women are actively engaged in activities or initiatives to alter the status quo in maternity care provision. Cultural norms are very difficult to challenge as a result of the hierarchical system and strict controls.	From the 1970s onwards, improvements in women's status and growth of organized advocacy groups challenged over-medicalized care and lack of evidence in policy and practice. Active lay involvement in professional regulation, education, policy and practice.
Evidence-based policy and practice	Midwives not educated to be intellectually confident or competent to promote an evidence based approach. Care is ritualized, being based on custom and practice.	Midwives not educated to be intellectually confident or competent to promote an evidence based approach. Care is highly ritualized.	Research findings that challenged the over-use of interventions, along with midwives themselves being educated in research and the increasing use of evidence to inform policy and practice, helped to raise the profile of midwifery from the 1980s. Evidence-based policy and practice strong theme in midwifery and in maternity services. National evidence-based standards currently promote midwife-led care and choice of place of birth.
Sequelae for women ‡ and their families	Midwives are ill-equipped to be a woman's advocate. Not taught how to develop a professional relationship with, or to involve women in decision-making about their care. Not clinically confident or competent to facilitate normal processes during pregnancy and childbirth. No experience with a continuity model. Childbearing women expect to have decisions made for them, be cared for by doctors, to give birth in an obstetric unit and to see different doctors during pregnancy, labour and birth and postpartum.	Midwives cannot psychologically or legally conceive themselves to be a woman's advocate. Not taught how to develop a professional relationship with, or to involve women in decision-making about their care. Not clinically competent to facilitate normality during childbirth. No experience with a continuity model. Childbearing women expect to have decisions made for them, be cared for by doctors, to give birth in an obstetric unit and to see different doctors during pregnancy, labour and birth and postpartum.	All women and infants have access to midwifery care, increasingly on a continuity model. Midwives educated to be advocates for women and families though not always enabled to be so. Limitations on the scope of practice limit full potential. Higher-than-expected maternal and neonatal mortality rates and the use of unnecessary interventions remain challenging.
Opportunities	Mentors are now being introduced although as yet there is no mentor training or supervision programme. There are a few midwifery led units (MLUs) in Italy (for example, Genoa, Florence, Milan, Reggio Emilia), run by the Association of Independent Midwives. Women have to pay to receive care in them. There is one public MLU in Florence (La Margherita) although women see an obstetrician on admission and a paediatrician at discharge. MLU-based midwives can accompany women who they transfer to hospital but this is not regulated: it is up to them to build a good relationship with the nearest hospital's managers, midwives and doctors. For a fee, some MLUs provide "training programmes" for qualified midwives. These programmes are not recognized by the Italian NHS equivalent.	A few Roddoms (number unknown) provide antenatal consulting and birth rooms where women can be cared for by a midwife of their choice. Typically this is a state qualified midwife who is working as an independent midwife, in collaboration with an obstetrician and paediatrician. This currently small-scale fee paying service has arisen in response to an increasing request expressed by women who want to be active participants in shaping the care they receive and for that care to be skilled and compassionate. Pregnant women and their partners/family members can attend private antenatal education sessions and postnatal care provided by a mix of state qualified and lay midwives. These sessions are delivered in a user-friendly style, and the facilitators refer to evidence-based practice.	Drawing on best evidence, national multi-professional standards currently promote midwife-led care and choice of place of birth. This involves promoting out of hospital birth for healthy pregnant women. Strong professional leadership and active and engaged advocacy groups ensure political engagement and support.

**Midwives who are educated and work within the state system (UK, NHS equivalent). ‡Women who are cared for during pregnancy and childbirth by the state system.*

3. Stromerova Z. Midwifery in East Europe. *Midwifery Matters* 2012;133:4-6.
4. Emons JK, Luiten MIJ. [nd] *Midwifery in Europe*. EMLC, Deloitte & Touche.
5. Berg M, Asta Ólafsdóttir O, Lundgren I. A midwifery model of woman-centred childbirth care--in Swedish and Icelandic settings. *Sex Reprod Health* 2012;3:79-87.

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PLACE OF BIRTH IN EUROPE

Introduction

Providing pregnant women with a choice of where to give birth is a policy goal in some European countries and also a high priority for some user associations (1). In 2010, few births occurred in small maternity units (fewer than 500 births), but this varied considerably by country. In ten countries from 10 to 20% of births took place in units of this size, while in Denmark, Sweden, England, Slovenia, Ireland, Latvia and Scotland 25% to 33% took place in units with more than 5000 births (Figure 1). The percentage of births occurring in maternity units with 3000 or more births per year has increased with the exception of Finland and Spain (2).

Many countries reported that less than 1% of births took place at home. 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 a reduction 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) with or without care of the primary midwife (2).

Influencing factors

Macro, meso and micro factors can influence the options that women have about where and how to give birth, such as universal health coverage, influence of private obstetrics and the availability of midwives. In the last 5 years, emphasis has increased on how women's access to quality midwifery services has become a part of the global effort in achieving the right of every woman to the best possible health care during pregnancy and childbirth (3). National policies addressing maternity services have often ignored the centrality of the midwifery workforce and how it contributes to quality of care (4). Large variations are evident in the role, scope and funding of midwives, particularly in Europe. Even in countries with public health systems, the role and scope of midwives vary far more than that of other health professionals in the health care landscape (5).

The social, political and cultural organization of birth varies greatly even between high-income countries with similar levels of medical technology. Maternity policy is shaped by political systems, state organizations, the organization and regulation of professions and attitudes towards evidence based policy and risk in healthcare. Consumer organizations have played an important role in the debate about changing maternity care practices, resulting in media and government interest (6).

National policies and guidelines can support choice in place of birth. For example, since 1993 English maternity policy has supported choice of place of birth, recently reinforced in the 2014 National Institute for Health and Care Excellence clinical guidelines for intrapartum care. The guideline draws upon high quality evidence to support the choice of both multiparous and nulliparous healthy women in the choice of any birth setting (home, freestanding midwifery unit, alongside midwifery unit or obstetric unit). It outlines that for low risk nulliparous and multiparous women, planning to give birth in a midwifery led unit (freestanding or alongside) is particularly suitable for them because the rate of interventions is lower and the outcome for the baby is no different compared with an obstetric unit. It advises that for low risk nulliparous women planning to give birth at home there is a small increase in the risk of an adverse outcome for the baby, however for low risk multiparous women the outcome for the baby is no different compared with an obstetric unit (7).

Provision

Despite national policies and guidelines to promote user choice in maternity services in many European countries, current trends in maternity unit closures create a context in which user choice may be reduced rather than expanded. Maintaining an adequate supply of maternity services, equity in choice as well as high standards of quality of care in remote rural areas is also a concern. The debate on the consequences of maternity unit closures has focused primarily on the spatial accessibility of services and less attention has been paid to their potential impact on pregnant women's choice of maternity unit. Proximity has been found to be particularly important. In this regard, use of an indicator measuring the proportion of women for whom the distance between the first and second maternity unit is greater than 30 km can provide a simple measure of choice to complement indicators of geographic accessibility in evaluations of the impact of maternity unit closures (8).

There is 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 organization 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 and models of care provide similar outcomes for babies combined with lower levels of obstetric intervention and morbidity for their mothers, compared with units offering obstetrician-led care (9, 10). However, these units depend on a well organized referral system as transfers during delivery for unexpected complications are common.

Choice and cultural beliefs

Numerous factors can contribute to an individual woman's choice of place to give birth. Adequacy, abundance and proximity of supply all play a part in the decision making process. Women and families also have different perceptions of risk and value different aspects of quality. Culturally determined childbearing practices and beliefs distinguish some women from others. These include: choice of caregiver as midwife, obstetrician, family physician or traditional birth attendant; birth positions; caregiver gender; birth in hospital, birth unit or home; desirability of a partner/ companion during delivery;

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preference for intervention or non-intervention; mother–infant separation at birth or immediate skin-to-skin contact; nursery or rooming-in neonatal care; and breast or bottle feeding (11, 12).

Conclusion

The organization of maternity services and the choices available to women varies greatly throughout Europe. 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 organization found in Europe.

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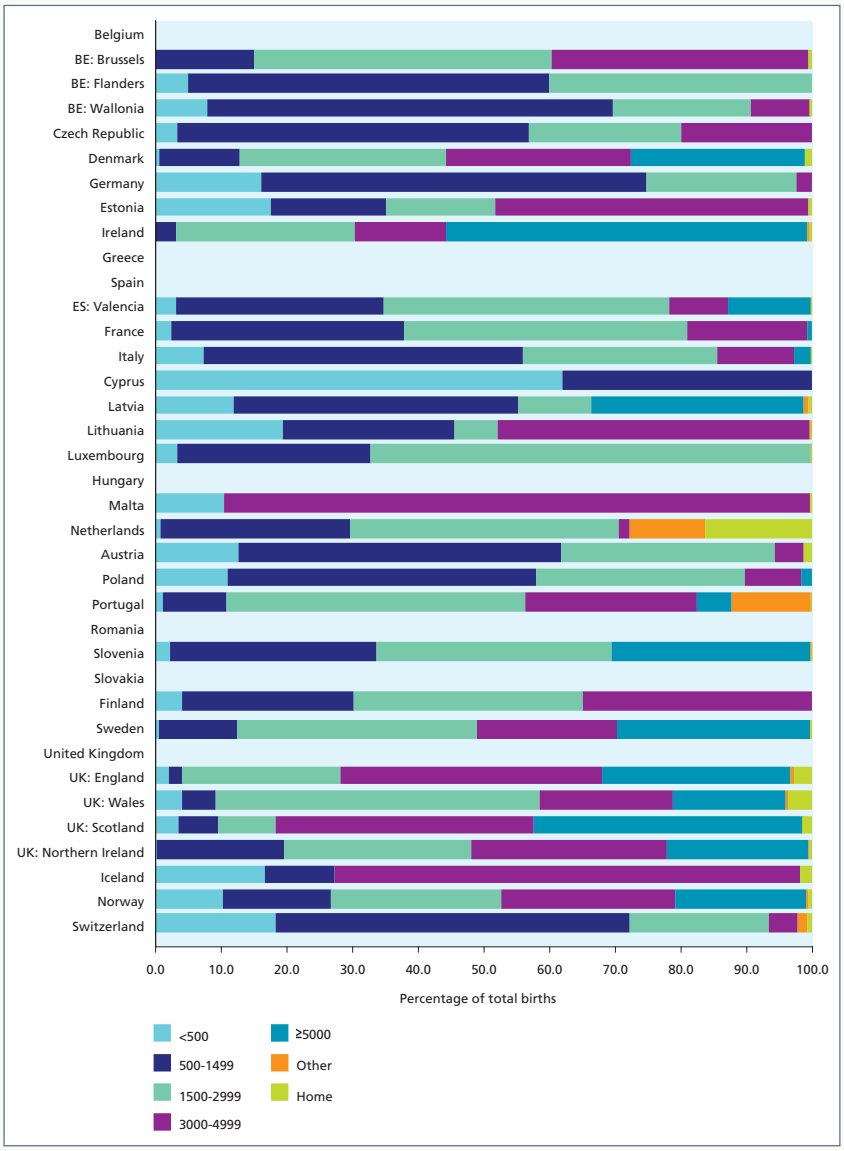
Figure 1. Distribution of births by maternity unit volume of deliveries in 2010. (Note: Twenty-nine countries or regions provided data for this indicator) (2).



References

1. Joyce M. Location, location, location, 2004. Available at: http://digital library.theiet.org/content/journals/10.1049/pe_20040602.
2. *European perinatal health report. The Health and Care of Pregnant Women and Babies in Europe in 2010*. EURO-PERISTAT, 2013.
3. *State of the World's Midwifery: a universal pathway. A woman's right to health*. UNFPA, International Confederation of Midwives & WHO, 2014.
4. Renfrew M.J. et al. 2014. Midwifery and quality care: findings from a new evidence-informed framework for maternal and newborn care. *Lancet* 2014; 384(9948):1129–1145.
5. Buscher A et al. *Nurses and Midwives : A force for health*. Copenhagen: WHO Regional Office for Europe, 2010.
6. De Vries, R, Benoit C, Van Teijlingen E et al. (Eds.). *Birth by design: Pregnancy, maternity care and midwifery in North America and Europe*. New York, London: Routledge, 2002.
7. *Intrapartum care care of healthy women and their babies during childbirth*. National Institute for Health and Care Excellence, 2014.
8. Pilkington H. et al. Choice in maternity care: associations with unit supply, geographic accessibility and user characteristics. *Int J Health Geogr* 2012; 11:35.
9. Birthplace in England Collaborative Group. 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 (4):7400.
10. Sandall J. et al. Midwife-led continuity models versus other models of care for childbearing women (Review). *The Cochrane Database Systematic Reviews*, 2013.
11. Chalmers B. Cultural Issues in Perinatal Care. *Birth* 2013; 40(4):217–219.
12. Coxon K, Sandall J, Fulop N.J. To what extent are women free to choose where to give birth? How discourses of risk, blame and responsibility influence birth place decisions. *Health, Risk & Society* 2014; 16: 51–67.

CHILDBIRTH: MYTHS AND MEDICALIZATION

Myths are a construct which serve to denote the 'cultural fabric' of a group; a shared culture creates myths which support the beliefs and biases of the group (1). Undoubtedly medical involvement in childbirth has done much to improve outcomes for many women and their newborns who experience medical or pregnancy related complications, but in recent years there has been increasing evidence that widespread medical involvement in childbirth is not always in the best interests of women experiencing straightforward low risk pregnancies. Myths about place of birth and safety, risk assessment and technological advances have led to the myth of high expectations and positive outcomes for childbearing women. These myths are shaped by government policies and have had an impact on both the resources for maternity care and also practices within maternity settings. What we wish to explore here are the myths about contemporary childbirth that include: the place of birth, caesarean sections (C/S) and midwifery led care.

Hospital is the safest place for birth

Perhaps the greatest myth about childbirth is that it is in the best interest of mother and baby that birth takes place in hospital. The past several decades have witnessed a largely consistent and persuasive argument that the hospital is the best and safest place for babies to be born. Subscription to this overriding single policy has led to little choice for women in terms of place of birth and has resulted in almost complete elimination of homebirth services in many countries.

The drive to concentrate maternity services into larger units with the provision of multidisciplinary care undoubtedly improves outcomes for women with complex pregnancies. However, the trend across Europe for birth to occur in large units is problematic for women who are at low risk of complications as larger units have a greater propensity for intervention in labour and lower rates of spontaneous births (2).

Alternatives to this provision of maternity services is homebirth but in many European countries, with the exception of the Netherlands and the United Kingdom (UK), homebirths are difficult to obtain. Obtaining a homebirth depends on local regulations and the availability of midwives. Midwives experience difficulties in obtaining insurance to provide homebirth service and payment for midwives may also be an issue. Relevant authorities do not always provide information to women about homebirth. Couples frequently experience considerable resistance to homebirth and the majority of European countries report that less than 1% of births take place at home (3).

Marjorie Tew (4) first demonstrated that better outcomes for mothers and newborns was not caused by increased hospitalization and medical care but was brought about by the improved health of mothers. More recently, the Birthplace study has provided data that identifies the risks and benefits of giving birth in a variety of settings (5). This identified that for women having a second or subsequent baby, a planned homebirth reduces the risk of interventions for the mother and does not increase risk for the baby. For women having a first baby, a planned home birth slightly increases the risk for the baby and there is an increased probability of transfer to hospital.

Birth centres are another alternative to birthing in large maternity units. These have been successfully introduced in several European countries and in Germany, the Netherlands and the UK, women increasingly have the option of attending a midwifery led birth centre. Birth centres may be free standing or may be adjacent to, or within maternity hospitals. The Birthplace data identified that when birth took place in either a freestanding or alongside birth centre, there were no significant differences in adverse perinatal outcomes compared with planned birth in an obstetric unit. These women had significantly fewer interventions, including substantially fewer intrapartum C/S, and more 'normal births' (5).

The myth that childbirth can only be considered safe if it occurs in hospital has been challenged by the National Institute of Clinical Excellence (6) which has published guidelines for the intrapartum care for low risk women. This requires that maternity care providers offer low risk pregnant women options for the place of birth. Options must include the provision of home birth, the availability of birth in a freestanding midwifery unit, alongside midwifery unit or obstetric unit. Throughout Europe most pregnant women have no choice other than to attend their local maternity hospital to give birth.

Caesarean section is now a safe procedure

The next myth we wish to explore is the safety of C/S. Throughout Europe and even within individual countries there is substantial variation in C/S rates. Cyprus had the highest overall rate, at 52.2%, with the Netherlands, Slovenia, Finland, Sweden, Iceland and Norway the lowest with rates below 20% (3). The risk factors for C/S, such as maternal age or parity, are not sufficiently marked to explain the wide disparities. Countries with high proportions of older mothers have both higher and lower rates.

There are global concerns about increasing C/S rates and the impact this has on both morbidity and mortality for women (7, 8) and while considerable improvements have been made in the safety of performing C/S, there is emerging evidence about the potential long term effects on the infant from unnecessary C/S. Early adverse effects includes the potential for impaired lung function, reduced temperature control and blood pressure, alterations to metabolism including feeding and more worryingly immune phenotype (9). Recent evidence has identified alterations in the infant's microbiome associated with abdominal rather than vaginal birth. This may be linked to the emerging evidence that children delivered by C/S have an increased rate of immune related disorders such as asthma, diabetes and obesity which may be related to their

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altered microbiome (10). Increases in systemic connective tissue disorders, juvenile arthritis, inflammatory bowel disease, immune deficiencies and leukaemia have also been reported. Another new area of research is in relation to the potential for the mode of birth to have an impact on the epigenetic profile of the newborn infant (11). If this is so, then the mode of birth may have a generational impact on future populations.

Obstetric led care is best for all women

The third myth we wish to explore is that obstetricians should be involved in the care of women experiencing straightforward low risk pregnancies. While team work between midwives and obstetricians is key to the provision of maternity care, the evidence is widespread that obstetric involvement in low risk women is unnecessary and leads to an increase in intervention in comparison to midwifery models of care. Midwifery led care for normal pregnancy and childbirth is an efficient and effective model of care and has been promoted as part of the Birthplace studies (12). Providing midwife-led care for low risk women may offer a means of reducing costs compared to obstetric led services (13) and the recent Lancet Series on Midwifery states that midwifery is the solution to the provision of high-quality maternal and newborn care.

The way ahead

A medicalized birth is not the best outcome for every woman and traumatic birth experiences are well documented. Statistics and research findings challenges the widespread belief that out of hospital births are not safe for women with straightforward pregnancies.

In changing the debate around childbirth and to ensure that maternity services meet the needs of women, decision makers and providers of maternity care should ensure that women have information about the safety of birth in various settings and ensure that they have options in relation for their care. The presumption that pregnant women with low risk of complications should attend hospital under obstetric led care to give birth is outdated. The awareness that rising C/S may have long term health problems for infants is a concern and the evidence indicates that the way to reduce unnecessary interventions in childbirth, without placing the mother or baby at increased risk, is to provide women with one to one midwifery care. This is best provided away from obstetric services in alongside or free standing midwifery units and should include the option for home birth.

Important to the expansion of midwifery led care is that collaborative relationships between professional groups must be maintained to ensure best care for women and their newborns. Trust and respect for each member of the multidisciplinary team is required and is particularly important to ensure seamless transfer of services between midwifery and obstetric care when this is required.

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References

1. Wood P. Guest editorial. *NZ College of Midwives J* 2004, 31, 4-6.
2. O'Connell M et al. The philosophy of practice governs the rate of obstetric intervention: analysis of 212 units in the United Kingdom. *J Matern Fetal Neonatal Med* 2003;13(4):267-70.
3. *European Perinatal Health Report. The health and care of pregnant women and babies in Europe in 2010.* EUROPERISTAT, 2013. Available at: www.europeristat.com.
4. Tew M. Safer *Childbirth: A Critical History of Maternity care.* London: Chapman Hall, 1995.
5. Brocklehurst P et al. 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 23;343:d7400.
6. NICE Intrapartum Care. *Intrapartum care: care of healthy women and their babies during childbirth.* 2014 National Collaborating Centre for Women's and Children's Health.
7. Villar J et al. Caesarean delivery rates and pregnancy outcomes: the 2005 WHO global survey on maternal and perinatal health in Latin America. *Lancet* 2006;367(9525):1819-29.
8. MacDorman M et al. Neonatal Mortality for Primary Cesarean and Vaginal Births to Low-Risk Women: Application of an "Intention-to-Treat" Model. *Birth* 2008;35(1):3-8.
9. Hyde M et al. The health implications of birth by caesarean section. *Biol. Rev* 2012 ;87(1):229-43.
10. Sevelsted A et al. Cesarean Section and Chronic Immune Disorders. *Pediatrics* 2015;135(1):e92-8.
11. Dahlen H et al. Is society being reshaped on a microbiological and epigenetic level by the way women give birth? *Midwifery* 2014 30(12): 1149-1151.
12. Schroeder L et al. *Birthplace cost-effectiveness analysis of planned place of birth: individual level analysis.* Oxford: NPEU, 2011.
13. Ryan P et al. An assessment of the cost-effectiveness of midwife-led care in the United Kingdom'. *Midwifery* 2013;29(4):368-76.

BREASTFEEDING INITIATION AT BIRTH CAN HELP REDUCE HEALTH INEQUALITIES

Introduction

WHO recommends that colostrum, produced at the end of pregnancy, is the newborn´s perfect food and it provides immune protection while the newborn's own immune system is developing. Breastfeeding should be initiated within the first hour after birth and be exclusive for six months. Benefits for infants include: reduction in diarrhoea and respiratory infections; protection against risk of obesity; improved I.Q.; and reduced risk of allergies as well as chronic diseases, such as diabetes, which have an immunological basis (1). Benefits for mothers include reduced risks of breast/ovarian cancer and obesity (1).

Breastfeeding Initiation by socioeconomic status (SES)

Mothers with lower SES (less income, education and employment) are much less likely to initiate breastfeeding than those with higher SES (up to 10 fold difference) and this is transmitted through generations (2). Moreover mothers with low SES may be adolescents and/or be obese and their infants are at risk of growth retardation as well as poor I.Q. development. Unfortunately data on breastfeeding initiation rates at birth, disaggregated by SES and age, are often lacking although these data could provide vital information to help reduce current differences.

KEY MESSAGES

- Don't assume what works for most, works for all – investigate reasons for lack of attendance by mothers from low socioeconomic groups (SEGs) at ante/perinatal services.
- Mothers from low SEG tend not to participate or drop-out and so our services may inadvertently contribute to exacerbating inequities.
- BFHI implementation, paid maternity leave and enforcement of International Code can improve breastfeeding initiation and duration.
- Pregnancy presents a window of opportunity to reduce health inequities:
  - Use participatory approaches to improve antenatal attendance of mothers from low SEGs and help remove barriers to breastfeeding and raise self-esteem;
  - Ensure skilled breastfeeding support, specialized for low SEG mothers, adolescents and their families;
  - Provide social benefits for fresh food purchases during lactation e.g. vouchers for vegetables; and
  - Protect breastfeeding in public places as the norm.
- Monitor breastfeeding initiation rates by SES along with the determinants of initiation.

Table 1. Examples of effective interventions to reduce inequity and improve breastfeeding initiation rates.

Drivers of inequity in mothers of low socioeconomic status	Examples of interventions to reduce inequity
Poverty	• Raise incomes through social protection; minimum wage and paid maternity leave. • Provide welfare vouchers for purchase of fresh food during lactation e.g. France. • Offer life-long education and skills training.
Barriers to accessing health services	• Implement BFHI throughout all birthing facilities and services. • Recruit professionals with diverse socioeconomic backgrounds. • Screen services to reduce marginalization and train staff how to avoid being judgemental. • Deliver breastfeeding counseling in community e.g. churches. • Recruit peer community workers or create mother-to-mother support groups.
Social marginalization	• Strengthen collaboration between health sector and sectors dealing with social protection and unemployment. • Empower adolescents to aspire to breastfeed. • Provide affordable and acceptable childcare, pre-school and schools that include breastfeeding as a "norm".
Marketing of infant formula	• Implement fully the Code in national law and enforce it.
Obesity	• Provide skilled professional assistance to support obese mothers to overcome the physiological and mechanical barriers to breastfeeding initiation.

What can be done?

1. In 1991 the Baby-friendly hospital initiative (BFHI) was launched. The original BFHI "Ten Steps" are now augmented to support both mother and baby in a wider range of settings and new community components include: leadership; counseling via local services; and training for all who assist in home deliveries. Implementation and regular updating of national plans should be monitored by a national breastfeeding coordinator along with a multi-sectoral breastfeeding committee.
2. The International Code of Marketing of Breastmilk Substitutes (BMS) and subsequent relevant World Health Assembly resolutions (the Code) regulate the marketing of BMS to protect the provision of nutrition for infants by regulating practices which can discourage breastfeeding. The Code ensures access to unbiased information and so enables parents to make decisions about infant feeding free from commercial pressures. Countries are recommended to: translate the Code into national law; enforce it; monitor violations; and act on violations through sanctions. The Code includes 10 important provisions that are summarized in the *Guide for Health Workers* (3). Even though the European Union (EU) Directive (2006/141) does not

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encompass the Code in its entirety, because it is adopted as a minimum requirement within the EU, national monitoring can, in addition to the Directive´s provisions, cover the Code provisions too.

3. Paid maternity leave, funded by social insurance or public funds, is a core requirement for the health and socioeconomic protection of mothers and their infants. Most countries have adopted statutory provisions for paid maternity leave however some protect *exclusive breastfeeding for 6 months* better than others. For example, a draft EU maternity leave Directive, adopted in its first reading by the European Parliament in 2010, has been stalled by the EU Council of Ministers. The Directive´s aim was to ensure a minimum of 20 weeks fully paid maternity leave across the EU and women were protected upon return to work. Fortunately many countries in the WHO European Region have adopted maternity leave that supports *6 months of exclusive breastfeeding* and research shows this improves initiation rates and breastfeeding maintenance (4). In addition no negative impact on productivity is observed and substantial benefits for businesses, including small and medium sized, are also indicated (5).

Use a step-wise approach and "First do no harm"

We must ensure current services do not make inequities worse. Unfortunately, though not our intent, health services may inadvertently make inequities worse. Our "usual" approach may have a negative impact on mothers most in need. For example information campaigns delivered without structural support and protection policies may have a negative impact because low income groups may be unable to act on the information due to lack of money, education, or employment rights. Community workers or mother-to-mother support groups may have more success compared with health professionals. For example, Roma Health Mediators, RHM, members of the Roma community, are trained to liaise between the community and health system. Health service utilization, especially for pregnant women among the Roma, has improved. The project works to advance the health and human rights of Roma by building the capacity of civil society leaders and organizations, as well as providing employment for, mostly female, RHMs. For more case studies related to improved breastfeeding initiation rates please see: http://www.unicef.org.uk/BabyFriendly/Commissioners/Case-studies/.

Interventions to reduce health inequities related to breastfeeding initiation

Interventions to reduce inequities in breastfeeding initiation demands a combination of innovative antenatal care and parenting support for mothers in low SEGs, incorporating BFHI criteria, along with paid maternity leave and acting on violations against International Code. Example of effective interventions are outlined in Table 1. Text box 1 provides a useful checklist for organizations, facilitities, policy makers and individuals to assess how they are doing when it comes to decreasing health inequities and improving rates of breastfeeding.

Conclusion

The most socially isolated mothers may feel marginalized by our health services so that they feel excluded from the health care system and are not willing to seek support. They require different approaches to help them feel empowered and to increase their self-esteem. We have to learn how health services can better improve breastfeeding initiation rates by mothers in all socioeconomic groups in order to reduce health inequalities from birth.

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Text Box 1.

CHECKLIST: ARE YOU ON TRACK TO IMPROVING BREASTFEEDING INITIATION RATES AND DECREASING HEALTH INEQUALITIES

- Do you routinely measure breastfeeding initiation rates at birth by SES?
- Have you identified which socioeconomic groups of mothers have the lowest breastfeeding initiation rates?
- Have you set targets for increasing the number of mothers, by SES, who initiate breastfeeding?
- Do you assess the impact of a range of ante/perinatal BFHI services on breastfeeding initiation at birth?
- Do you try to reduce marginalization of vulnerable mothers by inviting them to participate in discussions on how ante/perinatal services could better empower them to breastfeed?
- Do policies exist that:
  - Implement BFHI criteria and monitor violations of the Code?
  - Provide skilled breastfeeding initiation and parenting support and early infancy services for adolescents, obese mothers and mothers of low SES?
  - Provide skilled breastfeeding support for mothers who have to return to work soon after birth?
- Does paid maternity leave support exclusive breastfeeding for 6 months and paid breastfeeding breaks on return to work?
- Is there clear leadership and accountability for improving breastfeeding initiation rates in adolescents, obese mothers and mothers of low SES?

References

1. Horta B et al. *Evidence on the long term effects of breastfeeding. Systematic Review and Meta-analyses.* Geneva: WHO, 2007.
2. Robertson A, Lobstein T, Knai C. *Obesity and socioeconomic groups in Europe: evidence review and implications for action.* European Comission, 2007.
3. http://www.unicef.org/nutrition/training/5.2/16.html
4. *Maternity and paternity at work: law and practice across the world.* Geneva: ILO, 2014.
5. Lewis S, Stumbitz B, Miles L et al. *Maternity protection in SMEs: An international review.* Geneva: ILO, 2014.

ABORTION ON THE BASIS OF FOETAL SEX: CALLING CHOICE INTO QUESTION

Technological advances in healthcare are enabling women to have safer pregnancies, safer childbirth and if they choose so, safer terminations. Ultrasound machines are used throughout pregnancy to assess foetal growth rate, monitor progress during pregnancy and detect foetal abnormalities. Women can see 2D and 3D images of their foetus and at around 18-20 weeks of pregnancy find out the sex of the foetus. Developments in the use of ultrasound machines have undoubtedly been hugely beneficial in improving antenatal healthcare. However, their use in determining the sex of the foetus during pregnancy is a continuing source of contention among pro-choice activists, public health professionals and policy makers, due to the link with the practice of gender-biased sex selection.

Sex selection is not a new phenomenon and is not limited to abortion. Sex selection can take place pre- and post-implantation of an embryo. It has also been known to happen after birth through the practice of infanticide or through child abandonment at birth. Sex selection can refer to choosing either sex in a child and some families use it to achieve 'family balancing'. However, the issue which has left many traditionally pro-choice voices in contention is that of sex selection in preference for sons and the use of abortion to terminate a pregnancy solely because the foetus is female.

Abortion on the basis of foetal sex is a major issue among some populations, resulting in significant imbalances in the sex ratio of a region or country. In China, the one child policy and a preference for sons has resulted in a sex ratio at birth of 118 boys for every 100 girls, much higher than a normal rate of around 105 male births per 100 female (1). While historically we find skewed sex ratios at birth in Asian countries, there is emerging evidence of gender biased sex selection within eastern Europe and the Caucasus, particularly in Albania, Armenia, Azerbaijan and Georgia. The third child in a family is an important indicator of gender biased sex selection and often shows a striking shift oriented towards son preference. In Georgia, the sex ratio at birth was listed as 118 overall in the period from 1997-1999 and in Armenia third order births reflected a sex ratio at birth of up to 184, based on 2001 census data (2). Demographers warn that this imbalance is likely to lead to a myriad of social issues, ultimately threatening state security and prosperity. This is a real and significant problem. However, it is not one caused by the availability of safe and legal abortion services. The true cause of the problem lies in deeply entrenched gender inequality and discrimination leading to the desire to have sons instead of daughters.

At the International Planned Parenthood Federation (IPPF), a commitment to gender equality and to eliminating discrimination on the basis of sex or gender lies at the core of our values. Equally central to our values is the commitment to a woman's right to choose to terminate a pregnancy safely and legally. We believe that these two values are intrinsically linked – one cannot be achieved without the other. Our global network of Member Associations work tirelessly to remove the root causes of gender discrimination that leads to son preference, while simultaneously providing women with access to comprehensive sexual and reproductive health services. Sex selection is an issue that must be addressed without exposing women to the risk of ill-health, or even death, by denying them access to safe abortion.

Some governments are attempting to address the issue of sex selection by instituting laws and policies that criminalize women and medical professionals for obtaining or providing safe abortions on the basis of foetal sex. As yet, there is no evidence to suggest that banning abortion on this basis prevents the practice or improves sex ratio at birth. Legislation that bans testing to detect foetal sex and the termination of a pregnancy on the basis of foetal sex, such as in India and China, is hard to enforce. Affordable ultrasound services are widely available and foetal sex information can be relayed easily. An ultrasound can be conducted in one location and an abortion obtained in another. And as we know from countries where abortion is restricted on broad grounds, this rarely stops women from having abortions; it merely increases the chance that she will access an unsafe abortion (3).

There is evidence to suggest that banning abortion on the basis of foetal sex can make it harder for women to access safe abortion services overall (4). In India, the Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act 2003 prohibits the determination and disclosure of the sex of the foetus, through use of pre-conception or prenatal diagnostic techniques. Though the intent of this law is to prevent sex selection and correct the sex ratio imbalance, the impact of the law has been quite different. In India, there is a significant lack of knowledge about the availability of safe and legal abortion services. This coupled with a widespread campaign around the PCPNDT Act has led to confusion, with providers often believing this to mean that all abortions are illegal (5). In addition, there is evidence that providers are deterred from providing second trimester abortions for fear of being accused of breaking the law (6). The result is that women, no matter what their reason for wanting an abortion, now face additional barriers to accessing safe abortion, putting their lives at risk.

The sad reality is that in many societies girls are not valued equally to boys. Women can come under immense family and societal pressure to produce sons. Failure to do so may lead to consequences that include violence, rejection, or divorce. Women may have to continue becoming pregnant until a boy is born (7). In addition, a woman seeking an abortion based on the sex of the foetus may be doing so because she has legitimate fears about the life chances of that child. The neglect of girl children as a result of son

preference has been well documented and typically involves biased feeding practices, inadequate clothing during winter and less health care and education (7).

These considerations remind us that each woman who has an abortion does so under a unique set of circumstances and the person best placed to decide the outcome of a pregnancy is the pregnant woman herself. Ultimately, the impact of restricting abortion on any grounds is that it denies women control over their reproductive health, only serving to reinforce gender-based discrimination. It violates the right to autonomy and bodily integrity and the right to life and health as guaranteed in international human rights treaties.

It also plays into the hands of those who seek to regulate abortion on the basis of foetal sex with the broader aim to undermine and restrict women's access to safe abortion services overall, a common tactic of the anti-choice movement. Take for example a recent bill introduced in the Parliament of the United Kingdom (UK) to explicitly ban sex-selective abortion, despite no evidence to suggest it is a common practice in the UK. However, a campaign instigated in the media and spearheaded by an anti-choice Member of Parliament has resulted in a dialogue which is stigmatizing women who have abortions and has created an environment of fear among abortion service providers.

Therefore, it is crucial for the pro-choice movement and the sexual and reproductive health and rights community to have a clear and united voice on this issue. We must not be distracted by simplistic arguments. Abortion on the grounds of sex selection is a complex issue that needs and deserves greater consideration. We must ask ourselves what is the best approach to addressing sex selection at its root cause. We must be firm in saying that when abortion is not the problem, then restricting access to it is certainly not the answer. Hard fought gains in securing women access to safe abortion services must not be surrendered by implementing the wrong solution to a serious problem.

Instead, governments and civil society must work in partnership to instigate broad legal and policy measures that address underlying deep-seated gender inequalities. For example: laws for more equitable patterns of inheritance; policies on gender equality in property rights; and, greater progress in achieving equality in education. This alongside awareness-raising campaigns to change attitudes towards girls and women is likely to have a more sustainable impact by eradicating preference for a son and therefore the demand for abortion on the basis of foetal sex.

IPPF will continue to tackle the root causes of gender-based discrimination by implementing rights-based programmes that promote equality between men and women, and empower women and girls. And we will do so while passionately advocating for and increasing access to safe abortion services for all women, based on what is best for them.

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References

1. National Bureau of Statistics of China: http://www.stats.gov.cn/english/NewsEvents/201104/t20110428_26449.html [Accessed 11 December 2014]
2. Melse F et al. A Sharp Increase in Sex Ratio at Birth in the South Caucasus. Why? How? In Guilmoto, C and Attane, I (ed) *Watering the Neighbour's Garden.* 1st ed. Paris: CEPED, 2007. Pp 73-89.
3. *Facts on Induced Abortion Worldwide: Fact sheet.* Geneva: Guttmacher Institute and WHO, 2012 .
4. Ganatra B. Maintaining Access to Safe Abortion and Reducing Sex Ratio Imbalances in Asia. *Reprod Health Matter* 2008 16;(31 Supplement):90–98.
5. Visaria, L, Ramachandran, V, Ganatra B et al. Abortion in India: Emerging Issues from Qualitative Studies. *Econ Polit Weekly 2004* 39; (46/47): 5044-5052.
6. Dalvie S. Second Trimester Abortions in India. *Reprod Health Matter* 2008 16; (31 Supplement):37-45.
7. *Preventing gender-biased sex selection: an interagency statement.* Geneva: OHCHR, UNFPA, UNICEF, UN Women and WHO, 2011.

BODY IMAGE, PREGNANCY AND BIRTH

The escalating obesogenic environmental conditions in society strongly influence unhealthy food choices while promoting an infrastructure that favours minimum levels of physical activity. The adverse effects of the modern lifestyle are increasing the burden of non-communicable diseases (NCD). In this article, different aspects of the modern body image and its links to pregnancy and postpartum will be discussed. Malnutrition, in all its forms, is a serious public health issue in Europe and has a direct effect on the births in the 21st century.

Figures from the WHO European Region show that more than 50% of the adult population are overweight or obese (1) and on average, one in every three children aged 6 to 9 years is overweight or obese (2). According to projections, it is estimated that nine in ten adults will be overweight or obese by 2050 (3). There is therefore no doubt that overweight and obesity is a significant problem and its magnitude of spread is increasing by every passing day. There are underlying causes of this change, which include the abundance of cheap, processed, energy-dense foods that are high in fat, salt and sugar, bigger portion sizes and marketing of foods. The sedentary environment at home, school and work, which does not promote energy consumption is also another major factor.

Pregnancy is the time in a woman's life when weight gain is encouraged and expected while at the same time female body is idealized in our society. The psychological implications of overweight and obesity are depression, body image and stress. The relationship between body image and weight related concerns in the pregnant and non-pregnant phase is also a crucial dimension to ponder. Body image is defined as an internal picture or mental image formed in our minds. It is also the attitude that encompasses the emotional reactions and feeling towards the body and represents the individuals' valuation of their body. Research suggests that women feel more negative towards their body image in the last trimester as compared to the onset of pregnancy and pre-pregnant phase (4). During postpartum the degree of dissatisfaction towards body size and image decreases but the pressure to return to normal shape still remains the source of grievance and discontent. Thus, given the pervasive sociocultural pressures that reinforce the desirability of the thin-ideal appearance makes it difficult for women in pregnancy to maintain a positive attitude.

Pregnancy is an important time in the life of a woman as her body undergoes immense transformation. During pregnancy and postpartum, women's dissatisfaction with their bodies increases irrespective of how satisfied they were prior to the pregnancy. Evidence suggests that pregnant women who are affected negatively by changes to their body are less likely to initiate breastfeeding (5). Also, dissatisfaction during pregnancy might lead to unhealthy eating behaviours and weight loss, which might have direct adverse impact on the health of the mother and baby (6). These women have the tendency to compare their bodies and have public self-consciousness, the tendency to be conscious of whether one is being judged by others when in public. There are also environmental factors associated with body dissatisfaction such as teasing and social pressure to lose weight.

Pregnancy causes physical changes to the body, especially in the breasts and stomach and stretch marks, acne, skin pigmentation and varicose veins can also develop. This physical transformation, the internal psychological stress and the external pressure of staying fit make women feel unattractive and depressed. As a result of these changes, negative feelings can lead to weight retention and increased risk of obesity and diabetes throughout the life-course.

The negative evaluation of body size, shape and weight in obese and overweight women during pregnancy and postpartum leads to low self-esteem. Several theories explain the development and maintenance of body image disturbance, including the renowned theory which is the socio-cultural model. This model identifies social pressure as the impetus behind an individual's need to conform to body shape standards (7). Media, the fashion industry and the clothing industry have direct effects on body image and might cause distress to the female sex. Research suggests that the changing body size and shape of women over the past decade has been portrayed negatively in leading magazines. Bust and hip measurements have decreased and the body weight shown in magazines is 13-19% lower than a healthy weight. Such unattainable standards of appearance set by media make women feel worse about their body (7). Also, the fashion industry compounds the problem by the use of vanity sizes. Pregnant women keep on struggling to find the right size for them and end up wearing loose and shapeless clothes. This leads women to be in distress and might cause women to stay at home or work from home. Staying at home and interacting less with the outside world might make them prone to an unhealthier lifestyle, where they eat more and are less physically active.

The number of women who enter pregnancy overweight or obese is reaching alarming proportions in developed countries with more than 100 million women of reproductive age being obese, while a further 250 million are overweight (8). Overweight and obesity during pregnancy have serious health implications affecting the life-course of both mother and child. In mothers, these can result in miscarriage, caesarean section thrombo-embolism, gestational diabetes mellitus, hypertensive disorders of pregnancy, ovulation failure, polycystic ovarian syndrome and excess androgen production leading to menstrual disturbance, amongst others. Moreover, obesity associated morbidity extends immediately into the postpartum period and beyond. The success of breastfeeding is poor leading to an increased use of infant feeding formulas. In the babies both factors: obesity and feeding formulas can cause neuropsychological anomalies including neural tube defects, macrosomia, large-for-gestational-age babies, respiratory

distress, shoulder dystocia and increased susceptibility to NCD and obesity throughout the life-course.

The American Institute of Medicine (IoM) recommend that gestational weight gain should be limited to 0.5 to 2.0 kg by the end of the first trimester and about 0.5 kg per week thereafter (9). Although the IoM guidelines are the most utilized ones in Europe (6), a significant number of women gain more weight than recommended. An interesting aspect to shed light upon is that most women do not have the knowledge of the appropriate amount of weight which should be gained during pregnancy. Women with low pre-pregnancy BMI tend to under estimate their recommended weight gain while obese women over estimate their weight gain goal.

The overweight or obese mother and her child may require special medical care, including prolonged and multiple hospital admissions that might require ICU care. This creates an extra burden on medical health care services and economic resources. In contrast to obesity and overweight, underweight is also a highly important issue among pregnant women. This might lead to low birth weight, small-for-gestational-age babies and increased risk of intrauterine growth restriction.

Different community based behaviour change interventions have been carried out to address the weight issues during pregnancy. Educational messages can be distributed through local radio broadcast, pamphlet circulation, supermarket tour, cooking classes, telephone counseling for motivation, group classes and through home visits. On the other hand, individual approaches to weight management during pregnancy at prenatal and antenatal care have also shown encouraging results. Midwives, nurses and doctors play an active role in counseling women on the importance of healthy eating, physical activity, breastfeeding and weight management.

There is no doubt that obesity is a serious risk factor which impacts both the health and nutritional status of mothers and their babies throughout their life span. In order to decrease the risk of morbidity related to obesity in pregnant women and their offspring, effective and sustainable measures are needed to put the well-tailored strategies in action, for healthier generations. Strong leadership and serious cooperation both on the public health and the political side is needed. Legislations putting high sanctions on unhealthy food options and on advertisement of anorexic bodies in the fashion and clothing industry can help address the issues of body dissatisfaction among pregnant women.

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References

1. *European food and nutrition action plan 2015-2020*. Copenhagen: WHO Regional Office for Europe, 2014.
2. Wijnhoven T, van Raaij J, Breda J. WHO European Childhood Obesity Surveillance Initiative: body mass index and level of overweight among 6–9-year-old children from school year 2007/2008 to school year 2009/2010. *BMC Public Health* 2014;14: 806.
3. Huda SS, Brodie LE, Saltar N. Obesity in pregnancy: prevalence and metabolic consequences. *Semin Fetal Neonatal Med* 2010; 70-76.
4. Strang VR, Sullivan PL. Body Image attitudes during pregnancy and the postpartum period. *J Obstet Gynaecol Neonatal Nurs* 1985; 14: 332–337.
5. Brown A, Rance J, Warren L. Body Image concerns during pregnancy are associated with a shorter breast-feeding duration. *Midwifery* 2015; 31 (1):80-9.
6. Ushma JM, Anna S-R. Effect of Body Image on pregnancy Weight Gain. *Matern Child Health J* 2011; 15(3): 324-332.
7. Cusumano DL, Thompson JK. Body mage and body shape ideals in magazines: exposure, awareness and internalization. *Sex Roles* 1997; 37(9).
8. Schumann NL, Brinsden H, Lobstein T. A review of national health policies and professional guidelines on maternal obesity and weight gain in pregnancy. *Clinical Obesity* 2014; 4:197-208.
9. Curzik D, Topolovec Z, Sijanovi, S. Maternal overnutrition and pregnancy. *Acta Medica Croatia* 2002; 56, 31-34.

CZECH REPUBLIC AND OBSTETRICAL INTERVENTIONS

With current advances in medical technology and treatment and under general pressure to deliver a "prefect" baby under all circumstances we, as health care providers, are ready to intervene during labour and delivery very promptly, sometimes putting the threshold for decision below the "necessary" level. This development has led to the overuse of obstetrical interventions in some cases and, concurrently, to an effort to avoid interventions that are not medically necessary. Certainly, evidence based approaches should be used for balancing how much is needed and how much is too much - but it is frequently difficult to have an evidence based medicine solution for every obstetrical situation. However, do we really know what and how much we are doing? We are in need of relevant population-based data in this respect to be able to describe the current situation and possibly to target the weaker components of clinical practice.

Monitoring of perinatal health is a very important part of any health care system and a necessary tool to measure quality of care. To be able to evaluate and monitor perinatal health we are in need of proper measurable indicators to quantify changes in time, differences among different settings and to make international comparisons. The European Union (EU) is interested in the development of a European health information systems and that intention has led to the EUROPERISTAT Project for developing high quality indicators, establishing networks and producing reports on perinatal health in Europe.

One important part of the EUROPERISTAT interest is the question of the best use of healthcare interventions with respect to quality of care. Based on the consensus of participating parties, 10 core and 20 recommended indicators of perinatal health were selected. Several of the chosen indicators related to healthcare services are relevant to obstetrical interventions such as:

- Core indicator 10 – Mode of delivery,
- Recommended indicator 15 – Distribution of births by mode of onset of labour,
- Recommended indicator 18 – Episiotomy rate, and
- Recommended indicator 19 – Births without obstetric intervention.

Births without obstetric interventions are defined as births with spontaneous onset of labour, spontaneous progress of labour without medication and with spontaneous birth of the baby. Therefore women with induction of labour, use of drugs during labour, including anaesthetic, operative vaginal or abdominal birth and episiotomy should be excluded.

The Czech Republic has a long standing history of collecting individual perinatal data on all births in the country since 1994. The former individual data collection instrument was developed based on experience and along the lines of the WHO Project Obstetrical Quality Indicators Development (OBSQID) and since then it has been subjected to minor changes. Using the database mentioned above, we are able to produce some of the indicators related to medical interventions during labour, as selected by EUROPERISTAT, using routinely collected data in the Czech Republic during the period 2000-2012. These results are shared below.

RESULTS

Mode of delivery: Caesarean section delivery and operative vaginal delivery

During 2000-2012 we observed steadily increasing trends of caesarean delivery, increasing from 13.1% in 2000 to 25% in 2012 (Figure 1). The figures from recent years are close to the EU median of this mode of delivery (25.2% in 2010) (1). Comparatively, the Czech Republic has traditionally had a low incidence of vaginal operative deliveries (forceps and vacuum). They represent just about 2% of all births. However, there is notable change in favour of vacuum extraction during recent years (Figure 2). In the EU,

Figure 1. Trends in cesarean section.

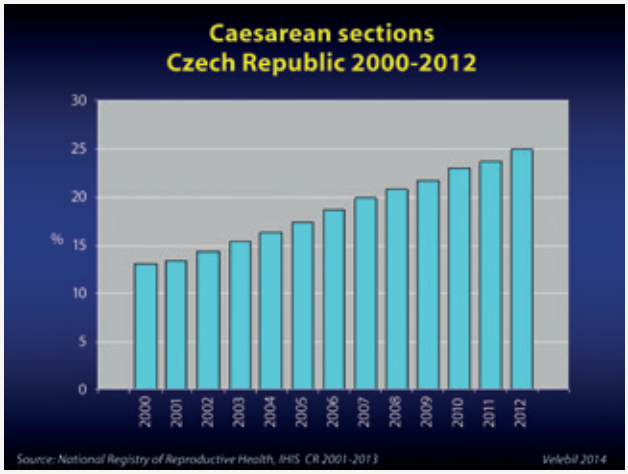

Figure 2. Percentage of all births that are operative vaginal deliveries.

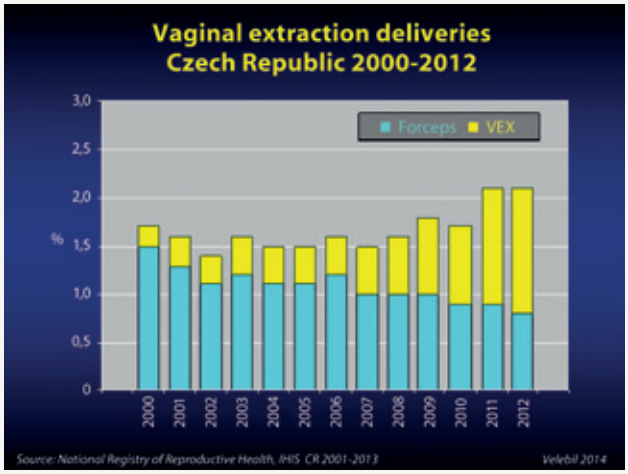

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Figure 3. Percentage of all births that undergo induction of labour.

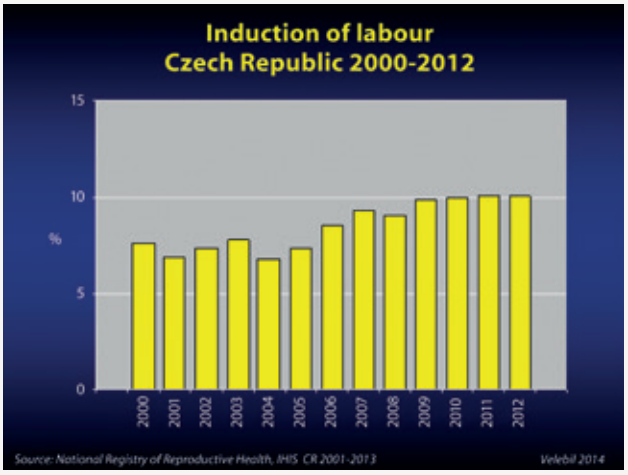
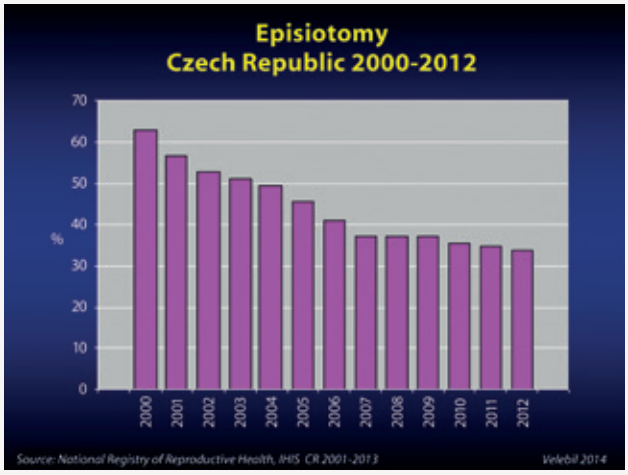


Figure 4. Percentage of all births with routine use of episiotomy.



vaginal extractions are ranging from 1.3% to 16.4% according to the EUROPERISTAT data from 2010 (1).

Induction of labour

Routine data shows a mild increase in induction of labour in the Czech Republic from 7.6% in 2000 to 10.1% in 2012 (Figure 3). The data reported by the EUROPERISTAT were ranging from approximately 7% to 27% in the EU in 2010 (1).

Episiotomy

Episiotomy was almost routinely used in the Czech Republic in the past. The data show that frequency of deliveries with episiotomy decreased substantially from 63.2% in 2000 to 33.9% in 2012 (Figure 4). This trend is promising because routine use of episiotomy is not recommended. The European Perinatal Health Report 2010 reports wide variation of episiotomy use among participating countries in Europe (1).

Conclusion

Although the Czech Republic has a nationwide system of collecting individual perinatal data, we are still unable to evaluate medical interventions in reasonable detail. As can be seen from the results shown above, in order to promote clinical practice where obstetrical interventions are used only in cases that require them, we need to link our data to not only the outcome in terms of maternal and newborn health, but also the indications.

While participating on the EUROPERISTAT Project, the Czech Republic decided to incorporate changes to the national individual perinatal data collection to meet the requirements and recommendation of the Project. This should enable us to produce all core and recommended indicators of EUROPERISTAT. For that purpose we used an opportunity that arose when the Czech Republic decided to put all the national reproductive health databases on a common electronic platform in 2014 to make the changes to the databases to comply with suggested European standards. The Czech Republic is currently piloting the updated system, which should be in practice in 2016. We believe that the analysis of the updated databases will help us to tackle the issue of obstetrical intervention during labour and delivery to promote natural birth when possible and to intervene in a timely manner only when necessary. It will also allow us to utilize common selected indicators to monitor and evaluate our progress not only within our country, but also across other European countries, to ensure that the quality of the obstetrical and perinatal care we provide is of the highest standard.

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References

1. EURO-PERISTAT Project with SCPE and EUROCAT. *European Perinatal Health Report. The health and care of pregnant women and babies in Europe in 2010.* May 2013. Available www.europeristat.com
2. WHO Regional Office for Europe: *Quality Development in Perinatal Care: The OBSQID Project. Report on a WHO Meeting.* Oporto, Portugal, 23–24 June 2000.
3. Institute of Health Information and Statistics: *Mother and newborn 2000-2011.* Prague 2001-2013. Available www.uzis.cz

UKRAINE'S EXPERIENCE WITH CAESAREAN SECTIONS: RATES AND INDICATIONS

According to official statistics the caesarean section (C/S) rate in Ukraine increased from 9.2% in 1998 to 16.5% in 2012 (1), although this varies across maternities and regions of the country. The Donetsk Region of Ukraine, with a population of 4.7 million, has a C/S rate that is higher than the rest of the country. In 2010 there were 41235 deliveries in the Region, with a C/S rate of 17.3% and in 2012 there were 43071 deliveries and the CS rate was 17.7%. Although this C/S rate does not greatly exceed the rates recommended by the WHO of 10-15% (2), we felt that it was important to understand the factors associated with C/S in the Region.

Our study had 2 parts. The first component collected and analyzed aggregated data from 44 maternities in the Donetsk Region, in the south eastern part of Ukraine, for 2010 and 2012. A specially developed and approved form was distributed at the maternities and completed by each hospital's administrative personal. Indication for C/S and urgency of the need for the C/S were used to analyze the data. The urgency of the need for C/S was documented using the following standardized scheme:

- Category 1 - Immediate threat to the life of the woman or foetus;
- Category 2 - Maternal or foetal compromise which is not immediately life-threatening;
- Category 3 - No maternal or foetal compromise but needs early delivery;
- Category 4 - Delivery timed to suit woman or staff.

This categorization was based on updated evidence-based C/S national guidelines accepted in Ukraine in 2011 and introduced at all maternities since 2012. Descriptive statistics and odds ratios (OR 95%CI) were applied.

The second aspect of our study collected data from 2 maternities with similar preterm delivery rates. Hospital 1 is a third level hospital where data were collected for January-June 2010 (total births=1845) and Hospital 2 is a second level hospital where data were collected for all of 2012 (total births=1917).

Table 1. Contribution of each C/S indicator to the overall C/S rate in the Donetsk Region, Ukraine, 2010 and 2012 (aggregated data from 44 maternities).

Indications for C/S according to nationally agreed protocol	C/S rate by different indications per total number of deliveries and total C/S					
	2010 (n=41 253)			2012 (n=43 071)		
	N	% of all deliveries	% of all C/S	N	% of all deliveries	% of all C/S
Obstruction for vaginal delivery (pelvic, tissue, tumor)	486	1.18	6.80	123	0.29	1.61
Uterine scar (previous C/S)	1559	3.78	21.80	1932	4.49	25.41
Placenta previa/ Placenta abruption	595	1.44	8.32	542	1.26	7.13
Severe preeclampsia	388	0.95	5.43	322	0.75	4.23
Common diseases (according to National Protocol)	79	0.19	1.10	98	0.23	1.29
Common diseases (not according to National Protocol)	466	1.13	6.52	268	0.62	3.52
Increase infection transmission risk (HIV, HSV)	94	0.23	1.31	184	0.43	2.42
Breech presentation	602	1.46	8.42	826	1.92	10.86
Foetal abnormalities (requires C/S according to National Protocol)	3	0.01	0.04	5	0.01	0.07
High perinatal risk (not according to National Protocol)	553	1.34	7.73	505	1.17	6.64
Abnormal progress of labour	551	1.34	7.70	554	1.29	7.29
Obstructed labour	745	1.81	10.42	858	1.99	11.28
Foetal distress	696	1.69	9.73	1078	2.50	14.18
Cord prolapse	87	0.21	1.22	82	0.19	1.08
Multiple pregnancy	70	0.17	0.98	226	0.52	2.97
Clinical death of mother	2	0.005	0.03	1	0.002	0.01
Missing information	176	0.43	2.46	N/A	N/A	N/A
Total number of C/S	7152	17.34	100	7604	17.65	100

Robson's classification for C/S was used to analyze the data. This classification system uses 4 obstetric characteristics (parity, labour type, gestational age and foetal presentation/number) to classify women into one of 10 groups, is easily replicable and subject to the least bias. Data were retrieved from archival Paper Registers officially approved and used in Ukraine and computed.

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Results

Data on contribution of each indicator to the overall C/S rate are presented in the Table 1.

The most common indication for C/S was that of previous C/S (uterine scar), accounting for 3.78% of all deliveries and 21.79% of all C/S in 2010 and 4.49% of all deliveries and 25.41% of all C/S in 2010. Interestingly, its rate increased 1.2 times (95% CI 1.1 – 1.3) from 2010 to 2012, despite the acceptance and implementation of national evidence based guidelines to support vaginal birth after C/S in the country in 2011. Whether this is client choice or provider driven is unclear. Breech presentation as an indication for C/S also increased during this time frame (OR 1.3, 95% CI 1.1-1.6) as well as foetal distress (OR 1.5, 95% CI 1.4 – 1.6), multiple pregnancies (OR 3.1, 95% CI 2.4 – 4.1) and risk of infection transmission (OR 1.9, 95%CI 1.5 – 2.4). In 2010 roughly 14% and 2012 roughly 10% of all C/S were done for indications that were not agreed upon or indicated in the national guidelines (under the categories of common disease of mother and perinatal risks). As C/S for maternal request was not approved as an indication for C/S in the national guidelines, we surmise that these 2 categories may in fact reflect maternal requests for C/S. The high rate of C/S due to foetal distress is also of particular interest, as this may be an area that could be decreased with implementation of additional foetal surveillance techniques. At present the capacity for fetal monitoring in Ukraine is limited and we rely primarily on intermittent auscultation. Electronic fetal cardiotocography (CTG) is rarely used due to lack of expendable materials (recording paper) and shortage of personnel CTG interpretation skills. Unfortunately, as only aggregated data were collected for our study purposes we are unable to correlate the indication of foetal distress for C/S with neonatal status.

When we analyzed C/S categories based on degrees of urgency we found that 47% of all cases fell into the 1st and 2nd categories of urgency and thus required immediate action. Thirty three percent of C/Ss were performed electively and an additional 20% had been scheduled on an elective basis but were performed emergently prior to the scheduled date due to unexpected indications (i.e. onset of labour or premature rupture of the membranes). This resulted in additional urgency both for the patient and for the staff.

Results from analysis of C/S rates using Robson's classification of the 2 hospitals revealed differing overall C/S rates (28.45% at Hospital 1 and 16.48% at Hospital 2). While the data collected were from different years (2010 and 2012 respectively) given the relatively short interval between the data collection it is reasonable to assume that C/S rates at each hospital did not change significantly over this period. Further evaluation as to whether this is due to different patient populations, practice patterns or both would be useful. Application of this system also identified similar groups of women who were most likely to be delivered by C/S. At both hospitals these were Group 1 (nulliparous women with single cephalic pregnancy, >37 weeks gestation in spontaneous labour) accounting for 5.96% of all deliveries at Hospital 1 and 6.15% of all deliveries at Hospital 2 and Group 5 (all multiparous women with at least one previous uterine scar, with single cephalic pregnancy, >37 weeks gestation) contributing to 6.94% of all deliveries at Hospital 1 and 4.01% of all deliveries at Hospital 2. Group 2 (nulliparous women with single cephalic pregnancy, >37 weeks gestation who either had labour induced or were delivered by CS before labour) was also identified as being more likely to be delivered by C/S at Hospital 1 accounting for 5.14% of all deliveries. These specific groups are deserving of more detailed analysis to understand the underlying factors associated with their contribution to the overall C/S rate.

Conclusion

Multiple methods can be utilized to try and understand the factors associated with the C/S rate in Donetsk, Ukraine. Indication based methods provide information on why the C/S was done, urgency based methods provide information on when it was done and woman based methods provide information on who is having C/S. Combined these methods can better help us determine if the right women at the right time is undergoing C/S. Our analysis in Ukraine has helped to identify groups and indications that require further analysis to better understand the client, practice and policy aspects that contribute to C/S rates and identify potential areas for modification.

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Reference

1. Golubchikov N, Rudenko M. *Health state of womens' population of Ukraine in 2012.* Kiev, 2013.
2. World Health Organization: Appropriate technology for birth. *Lancet* 1985, 326(8452):436-7.

RESOURCES

The European Perinatal Health Report 2010, Europeristat, 2013.

This comprehensive report provides an excellent overview of perinatal health in Europe. Available in English at:
http://www.europeristat.com/reports/european-perinatal-health-report-2010.html

The State of the World's Midwifery 2014.
A Universal Pathway. A Woman's Right to Health, UNFPA, 2014.

This excellent report highlights the progress, trends, barriers and challenges facing midwifery using data from 73 low and middle income countries. Available in English, French and Spanish at:
http://www.unfpa.org/sowmy

Making the Case for Midwifery: A toolkit for using evidence from the State of the World's Midwifery 2014 Report to create policy change at the country level, UNFPA, 2014.

This advocacy toolkit is an excellent resource for all involved in making birth safer for women and infants globally. Available in English and French at:
http://www.unfpa.org/resources/state-world%E2%80%99s-midwifery-2014-advocacy-toolkit

Born too Soon: The Global Action Report on Preterm Birth, WHO, 2012.

Global trends and estimates of preterm birth, as well as priority areas for action across research, programmes and policy areas are highlighted in this ground breaking report. Available in English and Russian at:
http://www.who.int/maternal_child_adolescent/documents/born_too_soon/en/

Infant and young child feeding: Model Chapter for textbooks for medical students and allied health professionals, WHO, 2009.

This document brings together essential knowledge about infant and young child feeding that health professionals should acquire. Available in English and Spanish at:
http://www.who.int/maternal_child_adolescent/documents/infant_feeding/en/

Planning guide for national implementation of the Global strategy for infant and young child feeding, WHO, UNICEF, 2007.

This document translates the aim, objectives and operational targets of the Global Strategy for Infant and Young Child Feeding into concrete, focused national strategy, policy and action plans. Available in English at:
http://www.who.int/maternal_child_adolescent/documents/infant_feeding/en/

Long-term effects of breastfeeding: a systematic review, WHO, 2013.

A follow up to WHO's 2007 review, this publication provides a comprehensive review of the long term benefits of breastfeeding. Available in English at:
http://www.who.int/maternal_child_adolescent/documents/breastfeeding_long_term_effects/en/

Report: Prevalence of and reasons for sex selective abortions in Armenia, UNFPA, 2012.

Using a survey of ever-pregnant women perceptions of and factors influencing sex preference in Armenia are analyzed. Available in English at:
http://eeca.unfpa.org/publications/prevalence-and-reasons-sex-selective-abortions-armenia

Sex Imbalances at Birth in Albania, UNFPA, World Vision, 2012.

This report examines the what, how and why of sex selection and imbalance in Albania. Available in English at: **http://eeca.unfpa.org/publications/sex-imbalances-birth-albania**

Mechanisms behind the Skewed Sex Ratio at Birth in Azerbaijan. Qualitative and Quantitative Analyses, UNFPA, 2014.

Findings from the research presented in this report explore factors contributing to and solutions for the problem of the skewed sex ratios in the Azerbaijani population. Available in English at: **http://eeca.unfpa.org/publications/mechanisms-behind-skewed-sex-ratio-birth-azerbaijan**

Hospital care for mothers and newborn babies quality assessment and improvement tool, WHO Regional Office for Europe, 2014.

Using a participatory approach, the updated version of the original 2009 tool assists hospitals and health authorities towards providing quality health care to mothers and newborn babies. Available in English and Russian at: **http://www.euro.who.int/en/health-topics/Life-stages/maternal-and-newborn-health/publications/2014/hospital-care-for-mothers-and-newborn-babies-quality-assessment-and-improvement-tool**

The Lancet Midwifery Series, Lancet 2014.

This excellent series from the Lancet places the needs of women and newborns front and centre while presenting international studies on the role of and importance of midwifery in improving he quality of MNCH. Available in English at: **http://www.thelancet.com/series/midwifery**

Useful Websites, upcoming events and courses

EURO-PERISTAT: www.europeristat.com

Global Alliance to Prevent Preterm Birth and Stillbirths (GAPPS): www.gapps.org

Preterm Birth International Collaborative (PREBIC): www. Prebic.org

European Midwives Association: www.europeanmidwives.com

European Association of Perinatal Medicine: www.europerinatal.eu

Inaugural Preterm Birth Prevention, Discovery and Innovation Meeting. May 7 2015, Florence, Italy.
More information available at: www. Prebic.org

PREBIC Annual Scientific Meeting and Workshop. May 8-10 2015, Florence, Italy.
More information available at: www. Prebic.org

Second European Congress on Intrapartum Care. ***Making Birth Safer.*** May 21-23 2015, Porto, Portugal.
More information available at: www.ecic2015.org

12th World Congress of Perinatal Medicine. Nov 3-6 2015 Madrid, Spain.
More information available at: www.wcpm2015.com

1st Congress of Joint European Neonatal Societies. Sept 16-20 2015, Budapest, Hungary.
More information available at: www.jens2015.eu

European Spontaneous Preterm Birth Congress. Gothenburg, Sweden, May 2016.
More information available at: www.espbc.eu

Women Deliver. Copenhagen, Denmark, May 16-19 2016. More information available at: www.womendeliver.org

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