

**7th European Public Health Conference:
Mind the gap: Reducing inequalities in health and health care
19-22 November 2014, Scottish Exhibition and Conference Centre, Glasgow, Scotland, UK**

Workshop title :

Better statistics for better health for mothers and newborns:
evaluation of national perinatal health indicators from the Euro-Peristat project

Topic(s) : Child and adolescent public health

Health data collection and systems - methodology, monitoring and reporting

Abstract :

Background: *The Euro-Peristat project's main goal is to improve mothers' and babies' health by building a European perinatal health surveillance system to provide evidence to policy makers, clinicians and users for informed decision-making. The project has documented large differences in health outcomes and care between countries in Europe based on national-level indicators collected for the years 2000, 2004 and 2010. Documenting these differences is important because it shows that gains in health are possible in most countries and raises important questions about the effectiveness of healthcare policies and the role of evidence in maternity and neonatal care.*

Objectives of the workshop: *To analyse most recent Euro-Peristat data on national indicators of maternal and neonatal health and care and to discuss the implications and utility of these results for the assessment of health policies and practices in Europe.*

Workshop format: *The workshop will include four 15 minute presentations. Three will present new results on key indicators of infant and maternal health from 29 European countries participating in Euro-Peristat in 2010 (fetal and neonatal mortality, multiple births and obstetric anal sphincter rupture). A fourth presentation will address the use of data linkage for improving capacity to evaluate outcomes and care in the European context. These presentations will be followed by a 30-minute moderated discussion about the use of European perinatal health reporting for evaluating policies and practices and effecting changes in health. This discussion will also address the question of how routine European surveillance of maternal and newborn health should be structured and sustained in the current institutional and financial context.*

Added value of the workshop: *Maternal and child health is a priority public health issue in Europe. This workshop will provide an up-to-date overview of data on health outcomes and care which will be of interest to specialists and non-specialists. The presentations will illustrate the important gains in knowledge that can be obtained by reinforcing routine European reporting. The discussion will solicit participants' view about the uses of these data for policy change and the type of routine surveillance that should be promoted on the European-level.*

Main message of your workshop 1:

Maternal and newborn health and health care can be improved in Europe, as shown by the marked disparities observed across European countries

Main message of your workshop 2 :

Comparison of perinatal indicators between European countries provides valuable benchmarks as well as insights for policy action.

Abstract 1 :

Title : Understanding declines in stillbirth and neonatal mortality in Europe
Presenting author : Dr Ashna Monhangoo
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Authors : A Mohangoo, J Zeitlin and the Euro-Peristat Research Group
Affiliation(s) : 1. TNO Netherlands Organization for Applied Scientific Research, Department Child Health, Leiden Netherlands; 2. INSERM, Perinatal, Obstetrical and Pediatric Epidemiology Research Team, Center for Epidemiology and Biostatistics (U1153), Paris, France
Abstract : Background: Fetal and neonatal mortality rates declined in most countries of Europe between 2004 and 2010. We investigated the contribution of changing gestational age distributions and gestational-age specific mortality rates to these declines.

Methods: Aggregate data on live births, fetal and neonatal deaths by gestational age were collected using a common protocol from countries and regions in the Euro-Peristat project in 2004 and 2010. Overall mortality rates were computed using inclusion thresholds of 28+ weeks for fetal deaths (N=25 countries) and 24+ weeks for neonatal deaths (N=22 countries). Rate ratios (RR) for mortality in 2010 versus 2004 were computed overall and by gestational age subgroups (24-27, 28-31, 32-36, 37+ weeks); pooled RR were derived using random-effects models.

Results: Changes in the gestational age distribution contributed little to declines in mortality between 2004 and 2010. Mortality declined in all gestational age sub-groups. For fetal mortality, RR were 0.81 [95% CI: 0.79 - 0.84] for all births, 0.88 [95% CI: 0.79-.1.03] at 28 to 31 weeks of gestation, 0.84 [95% CI: 0.77-0.91] at 32 to 36 weeks and 0.81 [95% CI: 0.72-0.92] at 37+ weeks. The corresponding RR for neonatal mortality were 0.72 [95% CI: 0.67-0.79], 0.75 [95% CI: 0.67-0.83], 0.78 [95% CI: 0.67-0.91] and 0.75 [95% CI: 0.64-0.85] respectively.

Conclusions: Recent declines in fetal and neonatal mortality have been driven by a reduction in gestational-age-specific mortality with gains at all gestational ages. Because of the distribution of births by gestational age, absolute declines in number of deaths were highest for births at term.

Message 1

Improvements in fetal and neonatal mortality have been driven by declines in gestation-specific mortality and not the reduction in at-risk groups. This raises questions about the need to reinforce primary prevention.

Message 2

Improvements affected not only the highest-risk infants, but also those at term. This has further implications for the focus of perinatal health policies.

Abstract 2 :

Title : The effect of multiple pregnancy on perinatal outcomes in Europe 2004–2010
Presenting author : Ms Anna Heino
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Authors : A Heino, M Gissler and the Euro-Peristat Research Group
Affiliation(s) : 1. National Institute for Health and Welfare (THL), Helsinki, Finland 2. Nordic School of Public Health (NHH), Gothenburg, Sweden
Abstract : Background: Multiple pregnancies are rising in many countries due in part to sub-fertility treatments. Multiple births have higher risks of adverse perinatal outcome with consequences for families and the health system. We investigated the impact of multiple births on rates of prematurity and mortality in 29 European countries.
Methods: Aggregate data were collected as part of the EURO-PERISTAT project for 26 countries in 2004 and for 29 countries in 2010. Multiple birth, preterm birth and mortality rates were calculated as well as risk ratios (RRs) for prematurity and mortality by multiplicity. Countries were grouped geographically: Northern, Eastern, Western and Southern Europe.

Results: On average the twinning rate in Europe in 2010 was 16.8 per 1000. Compared to 2004, twinning rates decreased in 3 countries, remained stable in 3 countries, and increased in all remaining countries from 0.7% to 6.3% (mean 2.4%). 5.9 percent of all singletons in Europe were born preterm (<37 weeks) in 2010. This proportion was unchanged in 2004 and 2010, but the proportion of preterm multiple births rose from 51.1% to 52.4%. Multiples had a 9-fold risk for prematurity compared to singletons (RR 9.3, 95% CI=9.2-9.3). No significant geographical differences were found in the proportion of multiples among preterm births. The proportion was the lowest in Eastern European countries (21.0%), but in Slovenia and the Czech Republic the proportion was as high as in other European regions. The proportion was the highest in Southern Europe (28.0%), mainly due to high numbers in Spain and Cyprus. Compared to singletons, multiple births had a more than two-fold risk for fetal mortality (RR 2.4, 95% CI=2.2-2.6) and almost six-fold risk for neonatal mortality (RR 5.6, 95% CI=5.2-5.9). Southern Europe had a slightly larger mortality risk than other European geographical areas.

Conclusions: Multiple pregnancies pose a risk to perinatal health across Europe. No straightforward differences were found between geographical areas, but differences within areas were larger than between areas. Countries should take further measures to prevent multiple births.

Message 1

The multiple birth rates and trends vary in Europe.

Message 2

Multiple pregnancies continue to pose extra risks for newborn health.

Abstract 3 :

Title : Is a low episiotomy rate associated with increased risk of obstetric anal sphincter rupture? An ecological study from 20 European countries in 2010

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Abstract : Background: The incidence of obstetric anal sphincter ruptures (OASR) is considered a good indicator of the quality of obstetric care because of its impact on anal incontinence for women and its association with obstetric practices. OASR rates have increased in some countries. The dramatic decrease in episiotomies, after publication of a meta-analysis favouring restrictive use, might contribute to this trend. We compared OASR rates in European countries and investigated ecological associations with episiotomy use.

Methods: We used national aggregate-level data from the Euro-Peristat project. 20 countries or regions provided data on OASR and episiotomy for vaginal deliveries in 2010 and 9 countries or regions provided data in both 2004 and 2010. In 2010 data were available for type of delivery (instrumental or non-instrumental). Statistical associations were tested with Spearman's ranked correlation.

Results: Rates of OASR were below 0.5% in Cyprus, Latvia, Poland, Romania and Slovenia, and higher than 3.5% in Denmark, Iceland and Sweden. A significant negative correlation between rates of OASR and episiotomy was observed in all vaginal deliveries ($\rho = -0.6645$; $p = 0.0014$). Associations were similar in instrumental and non-instrumental deliveries. There was no clear relation between time trends in episiotomy use and OASR rates in any given country. OASR rates increased over the 6-year period in all countries, except Germany, and episiotomy rates have decreased in every country, except those in the UK.

Conclusions: The OASR rates varied largely across Europe. The strong negative association between OASR and episiotomy use across countries in 2010 was not corroborated by the time trends analysis. Differences in the attention paid to perineum – leading to more restrictive use of episiotomies and better diagnosis and recording of perineal tears – could contribute to the negative association in 2010. There is a need for

more comparable data on OASR to use this indicator to monitor obstetric practices and their consequences on women's long term health.

Message 1

Restrictive use of episiotomies may contribute to the increased rates of OASR.

Message 2

Improved assessment of OASR is necessary for orienting national policies focussing on quality of obstetric care

Abstract 4 :

Title : Linking databases on perinatal health: a review of the literature and current practices in Europe

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Abstract : Background: International comparisons of perinatal health are complicated by the heterogeneity of data sources on pregnancy, maternal and neonatal outcomes. Record linkage by harmonizing data systems, enhances coverage, increases the information available about each birth and has been shown to improve the validity and quality of routine data. Linkage of data systems enables countries to develop their capacity for high quality perinatal health monitoring. We sought to assess the extent to which routine sources are linked for perinatal health research and reporting.

Methods: We conducted a systematic review of the literature by searching PubMed for studies on perinatal health citing linkage of routine databases or a cohort study to a routine database from 2001 to 2011. We also surveyed European health monitoring professionals participating in the Euro-Peristat project about use of linkage for national perinatal health monitoring.

Results: 536 studies fit our inclusion criteria. Nearly half were from the US, Sweden and the UK; a further 24 countries contributed at least one publication. Most studies linked combinations of vital statistics data, hospital records, medical birth registers and cohort studies. Other sources were specific registers (cancer (N=61), congenital anomaly (53) and ART (19)) as well as census (63), occupational (43), insurance (23) prescription (20), and educational (10) databases. Eighteen of 29 (62%) European countries reported using at least one linked dataset in 2010 to derive Euro-Peristat perinatal indicators and 5 used 2 or more.

Conclusions: Studies using linkage are concentrated in a few countries and routine linkages are not systematic practice in Europe. Linkage techniques have proven especially useful for public health scientists to answer complex research questions, conduct original life-course analyses, confidential enquiries, provide subgroup estimates of maternal or infant mortality, and to study trends in perinatal health indicators.

Message 1: *Linkage of routine data systems is a readily available option for improving the quality and completeness of perinatal health indicators.*

Message 2: *Broader adoption of linkage could yield substantial gains for research and surveillance of perinatal health nationally and internationally.*



BETTER STATISTICS FOR BETTER HEALTH
for pregnant women and their babies