

# **Comparability of perinatal health indicators in Europe: Summary of findings from the European Perinatal Health Report**

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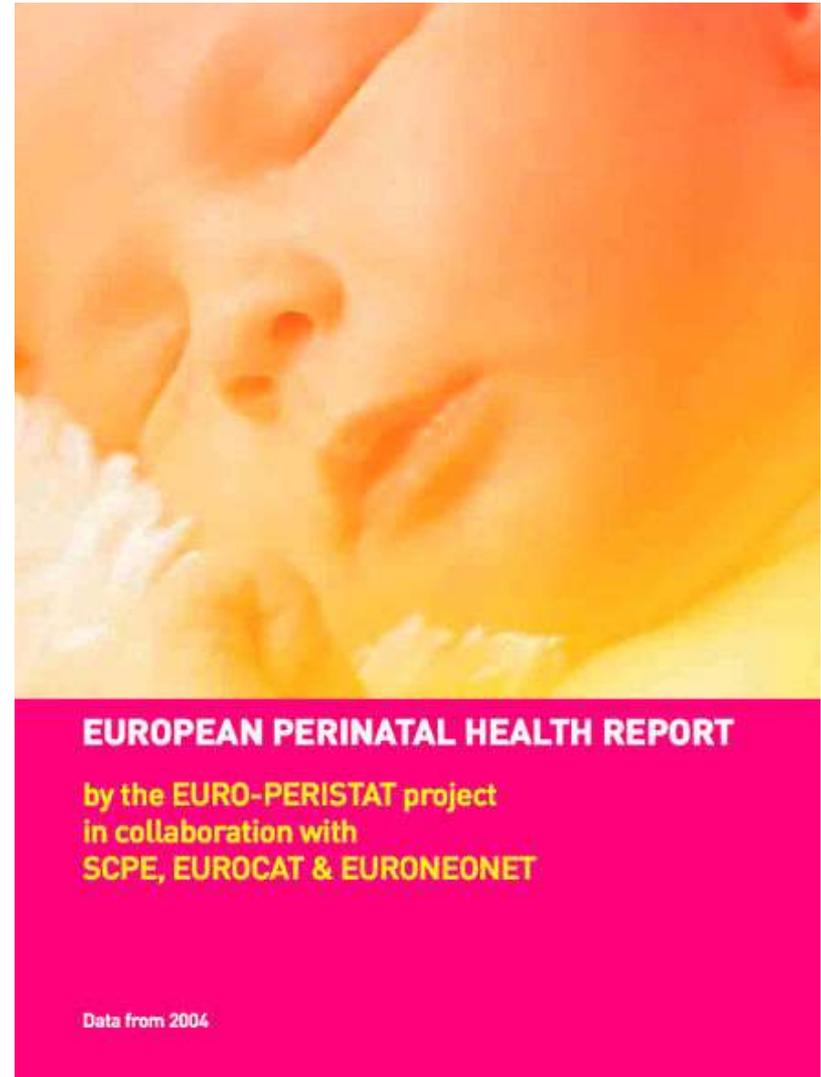
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# Collaboration since 1999

- The EURO-PERISTAT project's goal is to develop valid and reliable indicators that can be used for monitoring and evaluating perinatal health in the EU.
- Three EU-funded projects
  - Indicators for Monitoring and Evaluating Perinatal Health in Europe 2000-2003 (15 EU-members)
  - EUROPERISTAT II–A comprehensive health information and knowledge system for evaluating and monitoring perinatal health in Europe 2005-2008 (25 EU-members)
  - EURO-PERISTAT III: Better Statistics for Better Health for Pregnant Women and Their Babies: European Perinatal Health Report 2008-2009 (25 EU-member + Norway)

# European Perinatal Health Report

- The most comprehensive report on perinatal health in Europe.
- Published in December 2008.
- Available at:  
[www.europersistat.com](http://www.europersistat.com)



# Development of indicators

- Indicators were selected in multiphase DELPHI-process and further divided into four themes:
  - Fetal, neonatal, and child health indicators
  - Maternal health indicators
  - Indicators on population characteristics and risk factors
  - Indicators on health services
- ... and three levels:
  - Core indicators
  - Recommended indicators
  - Indicators for further development

# Core perinatal health indicators

## + their availability in 29 European countries and regions

- FETAL, NEONATAL, AND CHILD HEALTH
  - Fetal mortality rate by gestational age, birth weight, plurality (21-25)
  - Neonatal mortality rate by gestational age, birth weight, plurality (21-25)
  - Infant mortality rate by gestational age, birth weight, plurality (14-18)
  - Birth weight distribution by vital status, gestational age, plurality (24-26)
  - Gestational age distribution by vital status, plurality (24-25)
- MATERNAL HEALTH
  - Maternal mortality ratio by age, mode of delivery (6-25)
- POPULATION CHARACTERISTICS/RISK FACTORS
  - Multiple birth rate by number of fetuses (28)
  - Distribution of maternal age (27)
  - Distribution of parity (24)
- HEALTH CARE SERVICES
  - Mode of delivery by parity, plurality, presentation, previous caesarean section (11-15)

# Perinatal health monitoring systems consist of different parts

- A Register-based data sources
  1. Civil registration based on birth and death certificates, including causes-of-death certification
  2. Medical birth registers and perinatal databases
  3. Hospital discharge registration systems
  4. Other registers
- B Survey data
  1. Perinatal surveys
  2. Confidential enquiries and audits
  3. Other routine surveys
- C Aggregated data collections
  1. Perinatal surveys
  2. Confidential enquiries and audits
  3. Other routine surveys

# Problem 1: Registration criteria

- Registration criteria varies between countries and even within country
  - Live births: all / 22 weeks / 500 grams
  - Stillbirths: 12 / 16 / 22 / 24 / 25<sup>+5</sup>/<sub>7</sub> / 28 weeks  
500 / 1000 grams
  - Are late pregnancy terminations registered as stillbirths or not?
- The WHO recommendation (International comparisons for children weighing 1000 grams or more) is out-of-date for OECD.

## Problem 2: Coverage

- Coverage in population registers varies:
  - citizens and permanent residents
  - non-residents
    - immigrants, refugees and asylum seekers and
    - visitors
    - women from other countries seeking health care
  - citizens' births in other countries
- Hospital-based data collection systems may exclude
  - births outside hospitals
  - births without an overnight stay
  - private institutions

## Problem 3: Registration unit and period

- Registration unit varies by data:
  - women giving birth, deliveries, total births, live births, singletons etc.
- Mortality can be calculated in two ways:
  - by birth cohort or by death cohort
- An extreme example of a variable with seven different definitions is maternal smoking:
  - before pregnancy, at the start of pregnancy, during the first trimester, after first trimester, during the third trimester, at delivery and throughout the entire pregnancy

## Problem 4: Denominators and numerators

- Discrepancies and inaccuracies were found, if the denominators and numerators came from different datasets without any linkage
  - Mortality-rates for very premature children approaching zero.
  - Mortality rates exceeding 1000 per thousand.

## Problem 5: Missing data

- Information systems vary in the ways in which they handle missing data.
  - Ideally, 'not known' should be explicitly given as a separate category, but this is not always the case.
    - A tick box may be interpreted as a positive answer 'yes', but no distinction is made between 'no' and 'missing' if the box is not ticked.
  - Where data were stated to be missing in our data exercise, cases with missing data were excluded from calculations of rates and percentages in order to minimise bias.

## Problem 6: Random variation

- The basic unit in our data collection was country.
  - France, Germany, Italy and the United Kingdom: more than half a million births per year each.
  - Smallest countries with 4 000 – 8 000 births per year: Malta, Luxembourg, and Cyprus. Also Estonia and Slovenia as well as Brussels in Belgium have only between 14 000 – 18 000 births per year.
  - The number of births in the perinatal surveys are usually smaller than 20 000.
- Data for a single year did not contain a sufficient number of events to enable the frequency of rare events or rare outcomes.
  - Collection of data for more than one year necessary, e.g. for maternal mortality.
  - Confidence intervals can be recommended to show the statistical variability in the estimates in relation to sample sizes.

# Conclusions

- Perinatal health monitoring system needs improvements in all countries.
- Data protection issues may affect data collection
  - data on stillbirths is not collected in France any longer.
- The harmonisation of stillbirth and perinatal mortality statistics is needed.
- A new classification is required for comparing causes of deaths in perinatal and infant period.
- How perinatal health surveillance is done EU in the future remains unclear:
  - European Perinatal Health Monitoring Centre?

# Core perinatal health indicators: OECD

- FETAL, NEONATAL, AND CHILD HEALTH
  - Fetal mortality rate by gestational age, birth weight, plurality
  - **Neonatal mortality rate** by gestational age, birth weight, plurality
  - **Infant mortality rate** by gestational age, birth weight, plurality
  - Birth weight distribution by vital status, gestational age, plurality
    - **low birth weight among live births**
  - Gestational age distribution by vital status, plurality
- MATERNAL HEALTH
  - **Maternal mortality ratio** by age, mode of delivery
- POPULATION CHARACTERISTICS/RISK FACTORS
  - Multiple birth rate by number of fetuses
  - Distribution of maternal age
  - Distribution of parity
- HEALTH CARE SERVICES
  - Mode of delivery by parity, plurality, presentation, previous caesarean section
    - **caesarean section rates per 1000 live births**

# Other perinatal health indicators: OECD

- Average length of stay
  - Medical abortion O04
  - Other pregnancy with abortive outcome O00-03, O05-08
  - Complications of pregnancy predominantly in the antenatal period O10-O48
  - Complications of pregnancy predominantly during labour + delivery O60-O75
  - Single spontaneous delivery O80
  - Other delivery O81-O84
  - Complications predominantly related to the puerperium O85-O92
  - Other obstetric conditions O94, O95-O99
  
- Patient safety indicators (Health Care Quality Indicators)
  - Obstetric trauma vaginal delivery with instrument
  - Obstetric trauma vaginal delivery without instrument

Thank you!