Background
It is estimated that 15 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.

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

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

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

![Figure 1. Rates of preterm birth in Europe (6).](image)

<table>
<thead>
<tr>
<th>Country/region/area</th>
<th>All live births</th>
<th>Singleton live births</th>
<th>Multiple live births</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>77 720 9.1</td>
<td>10.0</td>
<td>11.4</td>
</tr>
<tr>
<td>Belgium (Flanders)</td>
<td>69 187 7.0</td>
<td>7.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>119 455 5.4</td>
<td>5.4</td>
<td>7.7</td>
</tr>
<tr>
<td>Denmark</td>
<td>16 031 5.5</td>
<td>5.9</td>
<td>6.9</td>
</tr>
<tr>
<td>Estonia</td>
<td>31 287 5.4</td>
<td>5.3</td>
<td>5.3</td>
</tr>
<tr>
<td>Finland</td>
<td>15 496 5.8</td>
<td>5.0</td>
<td>6.1</td>
</tr>
<tr>
<td>France</td>
<td>6 496 5.4</td>
<td>6.2</td>
<td>6.3</td>
</tr>
<tr>
<td>Germany 3 Länder</td>
<td>215 634 8.8</td>
<td>9.2</td>
<td>9.0</td>
</tr>
<tr>
<td>Ireland</td>
<td>75 246 5.4</td>
<td>5.5</td>
<td>5.9</td>
</tr>
<tr>
<td>Lithuania</td>
<td>31 287 5.3</td>
<td>5.3</td>
<td>5.3</td>
</tr>
<tr>
<td>Malta**</td>
<td>4 152 6.0</td>
<td>7.2</td>
<td>6.7</td>
</tr>
<tr>
<td>Netherlands</td>
<td>175 160 7.8</td>
<td>7.7</td>
<td>7.8</td>
</tr>
<tr>
<td>Norway</td>
<td>65 764 6.4</td>
<td>6.7</td>
<td>7.1</td>
</tr>
<tr>
<td>Portugal</td>
<td>414 480 6.8</td>
<td>6.8</td>
<td>6.8</td>
</tr>
<tr>
<td>Romania</td>
<td>31 287 5.3</td>
<td>5.4</td>
<td>6.2</td>
</tr>
<tr>
<td>Slovenia</td>
<td>21 616 6.0</td>
<td>6.8</td>
<td>7.0</td>
</tr>
<tr>
<td>Spain</td>
<td>417 094 7.1</td>
<td>7.7</td>
<td>8.0</td>
</tr>
<tr>
<td>Sweden***</td>
<td>108 865 6.1</td>
<td>6.4</td>
<td>6.3</td>
</tr>
<tr>
<td>UK: Scotland</td>
<td>58 275 7.0</td>
<td>7.4</td>
<td>7.6</td>
</tr>
</tbody>
</table>

*Data from France come from a nationally representative sample of births, and the years are 1996, 2001, 2005, and 2010
**2009, instead of 2008 data

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

![Figure 2. Approaches to prevent preterm birth and reduce deaths among premature babies (1).](image)
remains at 50% and the long term mor-
bidities 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, hyper-
tension 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 at-
tendants, 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 ex-
group experts 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 evi-
dence based strategies to low and middle
resource countries and to drive research
to improve outcomes for all preterm ba-
ges regardless of place of birth (Figure 3).

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