Birth By the Numbers 2017

Is there a problem in the U.S.?

Gene Declercq, PhD
www.birthbythenumbers.org

With support from:
The Transforming Birth Fund

Updated as of February, 2017
3,977,745, 11,442, 1,272,503, 38,542, 9.2%, $18,570, $62,689,000,000,000, BirthByTheNumbers.org
Total U.S. Births, 1990-2015

Source: Adapted from CDC VitalSTATS. http://www.cdc.gov/nchs/VitalStats.htm
BirthByTheNumbers.org
Fertility rates computed by relating total births, regardless of age of mother, to women 15-44 years.

Prematurity

Low Birthweight

11.8% Decrease 2006-15

BirthByTheNumbers.org
Percent of all births at home, or in a birthing center, United States, 1990-2015

- **Total home & birth center**: 46,956 (1.13%)
- **Home**: 35,587 (0.87%)
- **Birthing center**: 18,892 (0.47%)

**66% Increase 2004-2015**

Is the U.S. really doing as badly as it seems in international comparisons?
Is the U.S. really doing that badly?

How Do we Compare Outcomes?

Neonatal Mortality Rate

Infant Deaths in First 28 days

X 1,000

Live Births
<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Rank</th>
<th>Country</th>
<th>Rank</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Andorra (1/1,000)</td>
<td>14</td>
<td>Czech Republic</td>
<td>27</td>
<td>Sweden</td>
</tr>
<tr>
<td></td>
<td>Finland</td>
<td></td>
<td>Denmark</td>
<td></td>
<td>Canada (3/1,000)</td>
</tr>
<tr>
<td></td>
<td>Iceland</td>
<td></td>
<td>Estonia</td>
<td></td>
<td>Croatia</td>
</tr>
<tr>
<td></td>
<td>Japan</td>
<td></td>
<td>France</td>
<td></td>
<td>Cuba</td>
</tr>
<tr>
<td></td>
<td>Luxembourg</td>
<td></td>
<td>Germany</td>
<td></td>
<td>Greece</td>
</tr>
<tr>
<td></td>
<td>San Marino</td>
<td></td>
<td>Ireland</td>
<td></td>
<td>Lithuania</td>
</tr>
<tr>
<td></td>
<td>Singapore</td>
<td></td>
<td>Israel</td>
<td></td>
<td>Netherlands</td>
</tr>
<tr>
<td>8</td>
<td>Australia (2/1,000)</td>
<td></td>
<td>Italy</td>
<td></td>
<td>New Zealand</td>
</tr>
<tr>
<td></td>
<td>Austria</td>
<td></td>
<td>Monaco</td>
<td></td>
<td>Poland</td>
</tr>
<tr>
<td></td>
<td>Bahrain</td>
<td></td>
<td>Norway</td>
<td></td>
<td>Spain</td>
</tr>
<tr>
<td></td>
<td>Belarus</td>
<td></td>
<td>Portugal</td>
<td></td>
<td>Switzerland</td>
</tr>
<tr>
<td></td>
<td>Belgium</td>
<td></td>
<td>Repub. of Korea</td>
<td></td>
<td>United Kingdom</td>
</tr>
<tr>
<td>13</td>
<td>Cyprus</td>
<td>26</td>
<td>Slovenia</td>
<td>39</td>
<td>United States (4/1,000)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Rank</th>
<th>Country</th>
<th>Rank</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Andorra (1)</td>
<td>14</td>
<td>Cyprus</td>
<td>29</td>
<td>United Kingdom</td>
</tr>
<tr>
<td></td>
<td>Bahrain</td>
<td></td>
<td>Czech Republic</td>
<td></td>
<td>Canada (3)</td>
</tr>
<tr>
<td></td>
<td>Finland</td>
<td></td>
<td>Estonia</td>
<td></td>
<td>Croatia</td>
</tr>
<tr>
<td></td>
<td>Iceland</td>
<td></td>
<td>France</td>
<td></td>
<td>Denmark</td>
</tr>
<tr>
<td></td>
<td>Japan</td>
<td></td>
<td>Germany</td>
<td></td>
<td>Greece</td>
</tr>
<tr>
<td></td>
<td>Luxembourg</td>
<td></td>
<td>Ireland</td>
<td></td>
<td>Kuwait</td>
</tr>
<tr>
<td></td>
<td>San Marino</td>
<td></td>
<td>Israel</td>
<td></td>
<td>Lithuania</td>
</tr>
<tr>
<td></td>
<td>Singapore</td>
<td></td>
<td>Italy</td>
<td></td>
<td>Montenegro</td>
</tr>
<tr>
<td>9</td>
<td>Slovenia</td>
<td>28</td>
<td>Republic of Korea</td>
<td>41</td>
<td>United States (4)</td>
</tr>
<tr>
<td></td>
<td>Australia (2)</td>
<td></td>
<td>Netherlands</td>
<td></td>
<td>Poland</td>
</tr>
<tr>
<td></td>
<td>Austria</td>
<td></td>
<td>Norway</td>
<td></td>
<td>Spain</td>
</tr>
<tr>
<td></td>
<td>Belarus</td>
<td></td>
<td>Portugal</td>
<td></td>
<td>Switzerland</td>
</tr>
<tr>
<td></td>
<td>Belgium</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Cuba</td>
<td></td>
<td>Sweden</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Outcomes

Total Births in the five countries in red background in 2015 were 11,442 or comparable to the 11,311 in North Dakota in 2015.

<table>
<thead>
<tr>
<th>Country</th>
<th>2014-15 Births</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andorra</td>
<td>639</td>
</tr>
<tr>
<td>Iceland</td>
<td>4,129</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>6,115</td>
</tr>
<tr>
<td>San Marino</td>
<td>296</td>
</tr>
<tr>
<td>Monaco</td>
<td>263</td>
</tr>
<tr>
<td>TOTAL</td>
<td>11,442</td>
</tr>
</tbody>
</table>
What’s a Fair Comparison with the US?

In the most recent year available (2015):

• Countries with at least 100,000 births

• Countries with a total per capita annual expenditure on health of at least $2,000 annually in US dollars.
### Defining a Set of Countries to Compare with the U.S.

16 Comparison Countries


<table>
<thead>
<tr>
<th>Country</th>
<th>2013 Total Births (000)</th>
<th>2013 Total exp. health – PC, US$ PPP</th>
<th>2013 % Births by Cesarean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>308</td>
<td>3,866</td>
<td>31.2</td>
</tr>
<tr>
<td>Belgium</td>
<td>129</td>
<td>4,256</td>
<td>19.7</td>
</tr>
<tr>
<td>Canada</td>
<td>396</td>
<td>4,429</td>
<td>26.1</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>118</td>
<td>2,040</td>
<td>23.3</td>
</tr>
<tr>
<td>France</td>
<td>792</td>
<td>4,124</td>
<td>20.2</td>
</tr>
<tr>
<td>Germany</td>
<td>702</td>
<td>5,002</td>
<td>31.4</td>
</tr>
<tr>
<td>Greece</td>
<td>108</td>
<td>2,366</td>
<td>NA</td>
</tr>
<tr>
<td>Israel</td>
<td>157</td>
<td>2,428</td>
<td>19.9</td>
</tr>
<tr>
<td>Italy</td>
<td>560</td>
<td>3,126</td>
<td>37.7</td>
</tr>
<tr>
<td>Japan</td>
<td>1,062</td>
<td>3,768</td>
<td>18.0</td>
</tr>
<tr>
<td>Korea</td>
<td>472</td>
<td>2,440</td>
<td>34.6</td>
</tr>
<tr>
<td>Netherlands</td>
<td>179</td>
<td>5,217</td>
<td>15.6</td>
</tr>
<tr>
<td>Spain</td>
<td>488</td>
<td>2,928</td>
<td>24.9</td>
</tr>
<tr>
<td>Sweden</td>
<td>115</td>
<td>4,904</td>
<td>16.2</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>770</td>
<td>3,235</td>
<td>24.1</td>
</tr>
<tr>
<td>United States</td>
<td>3,954</td>
<td>8,713</td>
<td>32.8</td>
</tr>
</tbody>
</table>

* 2012 #2014

BirthByTheNumbers.org
IOM chose 16 peer countries. 13 are same as the one’s we’ve used. They use 4 countries (Denmark, Finland, Portugal, Switzerland) that have <100,000 births. We include Belgium, Czech Republic, Greece and Israel.
How is the U.S. doing relative to comparison countries?

<table>
<thead>
<tr>
<th>Neonatal Mortality Rate</th>
<th>Perinatal Mortality Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant Deaths in First 27 days $\times 1,000$</td>
<td>Fetal deaths + deaths in the first week $\times 1,000$</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Live Births</td>
<td>Live births + fetal deaths</td>
</tr>
</tbody>
</table>
Neonatal Mortality Rates (per 1,000 births), 2014, Industrialized Countries with 100,000+ Births

Source: OECD Health Data 2016 and NCHS, Deaths Final Data for 2014. BirthByTheNumbers.org

*2013; #2012;
Neonatal Mortality Rates (per 1,000 births), 2014, Industrialized Countries with 100,000+ Births

- Canada: 3.6
- United States: 3.4
- United Kingdom: 2.7
- Greece: 2.6
- France: 2.5
- Australia: 2.4
- Netherlands: 2.2
- Germany: 2.2
- Belgium: 2.2
- Spain: 2.1
- Israel: 2.1
- Italy: 2.0
- Korea: 1.7
- Czech Republic: 1.6
- Sweden: 1.4
- Japan: 0.9

Source: OECD Health Data 2016 and NCHS, Deaths Final Data for 2014.
Perinatal Mortality Rates (per 1,000 births), 2014, Industrialized Countries 100,000+ Births

Japan
Korea
Czech Republic
Italy
Spain
Netherlands
Israel
Sweden
Germany
Greece
Canada#
United States*
Belgium*
United Kingdom
Belgium*
France*
Australia*

Perinatal Mortality Rate

Source: OECD Health Data 2016
Perinatal Mortality Rates (per 1,000 births), 2014, Industrialized Countries 100,000+ Births

<table>
<thead>
<tr>
<th>Country</th>
<th>Perinatal Mortality Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>France*</td>
<td>10.6</td>
</tr>
<tr>
<td>Australia*</td>
<td>8.2</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>6.7</td>
</tr>
<tr>
<td>Belgium*</td>
<td>6.3</td>
</tr>
<tr>
<td>Canada#</td>
<td>6.0</td>
</tr>
<tr>
<td>Greece</td>
<td>5.6</td>
</tr>
<tr>
<td>Germany</td>
<td>5.4</td>
</tr>
<tr>
<td>Sweden</td>
<td>5.1</td>
</tr>
<tr>
<td>United States*</td>
<td>4.9</td>
</tr>
<tr>
<td>Israel</td>
<td>4.9</td>
</tr>
<tr>
<td>Netherlands</td>
<td>4.9</td>
</tr>
<tr>
<td>Spain</td>
<td>4.6</td>
</tr>
<tr>
<td>Italy</td>
<td>4.0</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>3.7</td>
</tr>
<tr>
<td>Korea</td>
<td>3.1</td>
</tr>
<tr>
<td>Japan</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Source: OECD Health Data 2016
Maternal Mortality Ratio

Maternal Deaths* all causes
X 100,000

____________________

Live births

* Deaths in pregnancy and up to 42 days postpartum
Maternal Mortality Rates, (per 100,000 births), 2013, Industrialized Countries with 300,000+ births

United States\(^{\text{^}}\) 12.7
Korea 11.5
U.S. NHWhite\(^{\text{^}}\) 10.5
United Kingdom 6.4
France\(^{\ast}\) 6.1
Australia\(^{\text{^}}\) 5.2
Canada\(^{\ast}\) 4.8
Germany 4.3
Spain 4.2
Japan 4.0
Italy\(^{\text{^}}\) 2.1

Maternal Mortality Ratio

Are things Getting Better or Worse?
Are things Getting Better or Worse?

Yes
Yes

Things are getting better in the U.S., but at a slower pace than comparable countries
Examining Trends over Time
Neonatal Mortality Rate (per 1,000 births), 2000-2014, U.S., & Ave. for Industrialized Countries*

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S.</th>
<th>Industrialized Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>4.6</td>
<td>3.2</td>
</tr>
<tr>
<td>2002</td>
<td>4.1</td>
<td>3.2</td>
</tr>
<tr>
<td>2004</td>
<td>3.9</td>
<td>3.0</td>
</tr>
<tr>
<td>2006</td>
<td>3.8</td>
<td>2.9</td>
</tr>
<tr>
<td>2008</td>
<td>3.7</td>
<td>2.8</td>
</tr>
<tr>
<td>2010</td>
<td>3.6</td>
<td>2.7</td>
</tr>
<tr>
<td>2012</td>
<td>3.5</td>
<td>2.6</td>
</tr>
<tr>
<td>2014</td>
<td>3.4</td>
<td>2.5</td>
</tr>
</tbody>
</table>

* Countries with 100,000+ births (2012): Australia, Belgium, Canada, Czech Republic, France, Germany, Greece, Israel, Italy, Japan, Netherlands, Spain, S. Korea, Sweden, U.K.

Neonatal Mortality Rate (per 1,000 births), 2000-2014, U.S., & Ave. for Industrialized Countries*

Rate per 1,000 live births

If the U.S. neonatal mortality rate equaled the current average rate of the other countries in 2014, that would mean about 7,658 fewer deaths to babies 28 days or younger annually.

* Countries with 100,000+ births (2012): Australia, Belgium, Canada, Czech Republic, France, Germany, Greece, Israel, Italy, Japan, Netherlands, Spain, S. Korea, Sweden, U.K.

>100,000 fewer neonatal deaths 2000-2014

Capacity – 92,524
Perinatal Mortality Rates, 2000-2014, U.S., & Ave. for Industrialized Countries*

* Countries with 100,000+ births (2012): Australia, Belgium, Canada, Czech Republic, France, Germany, Greece, Israel, Italy, Japan, Netherlands, S. Korea, Spain, Sweden, United Kingdom

Maternal Mortality Ratios (per 100K births), 2000-2013, U.S. & Comparable Countries *

Deaths per 100,000 live births

OECD 19% Decrease

U.S. 124% Increase

Case Ascertainment?

* Countries with 300,000+ births (2012): Australia, Canada, France, Germany, Italy, Japan, S. Korea, Spain, United Kingdom


NOTE: 2008-2013 US rates unofficial^
What about process?
If the 2015 cesarean rate was the same as in 1996, there would have been 449,000 fewer cesareans in the U.S. in ’15.

Source: National Center for Health Statistics Annual Birth Reports
Primary Cesarean and VBAC Rates, U.S., 1989-2011

Source: NCHS. Annual Birth Reports & Vital Stats
Cesarean Rates (%) in Industrialized Countries* with 100,000+ Births, 2014

- Korea*: 36.7
- Italy: 35.7
- Australia*: 32.7
- United States*: 32.0
- Germany: 30.8
- Canada*: 26.2
- Czech Republic: 25.4
- United Kingdom: 25.2
- Spain: 25.0
- France*: 20.8
- Belgium*: 20.7
- Sweden: 16.9
- Israel*: 15.8
- Netherlands#: 15.6

* No data on cesarean rates in Greece and Japan

#2010; *2011; ^2015
VBAC Rates Industrialized Countries, 2010

- Malta: 74
- Iceland: 52
- Finland: 52
- Netherlands: 47
- Norway: 46
- Germany: 36
- Denmark: 33
- England: 30
- Estonia: 29
- France: 34
- Belgium: 35
- Czech Republic: 21
- Latvia: 21
- Lithuania: 11
- Scotland: 10
- U.S.: 9
- Italy: 7
- Cyprus: 6

Percentage rates range from 6 to 74.
Do High Rates of Intervention Matter?

1. Outcomes
2. Costs
Gestational Age, U.S. All Births, 1990

- <34: 3%
- 34-36: 7%
- 37-38: 20%
- 39: 22%
- 40: 23%
- 41: 14%
- 42+: 11%
Gestational Age, U.S. All Births, 2015

- <34: 3%
- 34-36: 7%
- 37-38: 25%
- 39: 37%
- 40: 21%
- 41: 7%
- 42+: 0%
Gestational Age, U.S. All Births & Planned Home Births that Occur at Home, 2015
Economics of Childbirth in the U.S.
LEADING MAJOR DIAGNOSTIC CATEGORIES by NUMBER OF HOSPITAL DISCHARGES, U.S., 2014

- Diseases & Disorders Of The Circulatory System: 4,300,312
- Pregnancy, Childbirth & The Puerperium: 4,160,286
- Newborns & Other Neonates With Condtn Orig...: 3954050
- Diseases & Disorders Of The Respiratory System: 3301286
- Diseases & Disorders Of The Musculoskeletal...: 3291053
- Diseases & Disorders Of The Digestive System: 3025196
- Diseases & Disorders Of The Nervous System: 2115121
- Infectious & Parasitic Diseases, Systemic Or...: 1778746
- Diseases & Disorders Of The Kidney & Urinary...: 1625426
- Mental Diseases & Disorders: 1431743

MEDIAN FACILITY LABOR & BIRTH CHARGES BY MODE OF BIRTH, U.S., 2014

**NOTE:** Hospital charges; no physician costs

<table>
<thead>
<tr>
<th>Mode of Birth</th>
<th>Complications</th>
<th>Median Facility Charges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaginal</td>
<td>No</td>
<td>$10,580</td>
</tr>
<tr>
<td>Vaginal</td>
<td>Yes</td>
<td>$13,010</td>
</tr>
<tr>
<td>Cesarean</td>
<td>No</td>
<td>$18,570</td>
</tr>
<tr>
<td>Cesarean</td>
<td>Yes</td>
<td>$21,704</td>
</tr>
</tbody>
</table>


Birthbythenumbers.org
Estimated Total Charges, Hospital Birth, U.S., 1993-2014 (000,000)


Birthbythenumbers.org
Is it hopeless?

What can be done
• Evidence – keep an open mind and ask different questions.

• Advocacy – work for change.
Rethinking the Evidence

Safe Prevention of Primary Cesarean Delivery

www.acog.org/Resources_And_Publications/Obstetric_Care_Consensus_Series/Safe_Prevention_of_the_Primary_Cesarean_Delivery
Childbirth Advocacy Led by Mothers

Welcome to Choices in Childbirth

Choices in Childbirth is a non-profit organization that is a national leader in consumer advocacy and outreach for women and their families. At CIC we believe that every woman deserves a safe, respectful and deeply fulfilling birth experience. We help women make informed decisions about where, how and with whom to birth, and ensure that they have access to the full range of birth options. CIC constantly strives to improve maternity care across the country and to ensure that the birth of each child is treated with the reverence that it deserves.

Our Mission

http://www.choicesinchildbirth.org/
Childbirth Advocacy Led by Mothers

- DVD of the original The Business of Being Born (view trailer)
- Boxed DVD set including all four episodes of More Business of Being Born
- Adorable, 100% cotton Moby Knot Hat for ages 0-6 months in your choice of dark brown, pink, teal, purple, tan, maroon, or orange (view colors)
- Paperback copy of Your Best Birth by Ricki Lake and Abby Epstein
- The National Guide to a Healthy Birth

www.thebusinessofbeingborn.com/
Childbirth Advocacy Led by Mothers

Listening to Mothers™ III
Pregnancy and Birth

Report of the Third National U.S. Survey of Women’s Childbearing Experiences

Eugene R. Declercq
Carol Sakala
Maureen P. Corry
Sandra Applebaum
Ariel Herrlich
May 2013

https://www.childbirthconnection.org/
Childbirth Advocacy Led by Mothers

Online resources

Websites of Birth Experts in the Film
Click on each name or group to visit the website of a birth expert featured in Orgasmic Birth.

Sarah J Buckley, MD
Carrie Conte, PhD
Maureen Corry, MPH
Elizabeth Davis, BA, CPM
Robbie Davis-Floyd, PhD
Ina May Gaskin, MA, CPM
Ina May's Safe Motherhood Quilt Project
Anne Margolis, CNM, NP, RNC, MSN
Lonnie C. Morris, CNM, ND
Christiane Northrup, MD
Valeriana Pasqua-Masback, CNM
Lawrence Rosen, MD
Penny Simkin, PT
Marsden Wagner, MD

http://orgasmicbirth.com/online-resources