Maternal – Child Health and Impact of the Opioid Crisis

Rahul Gupta, MD, MPH, MBA, FACP
Chief Medical and Health Officer
Senior Vice President

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OBJECTIVES

• Discuss challenges in Maternal and Child Health

• Using West Virginia case study, discuss the Opioid Crisis

• Opportunities for prevention
CONFLICTS OF INTEREST

None
OUR MISSION

MARCH OF DIMES LEADS THE FIGHT FOR THE HEALTH OF ALL MOMS AND BABIES.
A BOLD VISION FOR MOMS AND BABIES

HEALTHY MOMS.
End Preventable Maternal Mortality and Morbidity

STRONG BABIES.
End Preventable Prematurity

End the Health Equity Gap
2018 PREMATURE BIRTH REPORT CARD

PRETERM BIRTH RATES AND GRADES BY STATE

Preterm is less than 37 weeks gestation based on obstetric estimate.
Source: National Center for Health Statistics, 2017 natality data

Grade for national preterm birth rate

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>8.1 or less</td>
</tr>
<tr>
<td>B</td>
<td>8.2 – 9.2</td>
</tr>
<tr>
<td>C</td>
<td>9.3 – 10.3</td>
</tr>
<tr>
<td>D</td>
<td>10.4 – 11.4</td>
</tr>
<tr>
<td>F</td>
<td>11.5 or greater</td>
</tr>
</tbody>
</table>
In United States, the preterm birth rate among black women is 49% higher than the rate among all other women.
PREMATURITY AND ITS COMPLICATIONS ARE THE LEADING CONTRIBUTORS TO INFANT DEATH

PRETERM-RELATED
A grouping of causes of death each determined to be a direct consequence of preterm birth (44 ICD – 10 codes).
National Center for Health Statistics (NCHS) researchers developed this list of causes to more fully assess the impact of preterm birth on infant mortality in the US.
INFANT MORTALITY RATES BY STATE, 2017

View the Infant Mortality Rates by State Map from the National Center for Health Statistics.
EQUITY AS A CROSS-CUTTING ISSUE

Infant Mortality Rates by Race and Ethnicity, 2016

*Source: p. 80 of the User Guide to the 2016 Period Linked Birth/Infant Death Public Use File [PDF – 1.25MB]*
Global, regional, and national levels of maternal mortality, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015

Summary
Background In transitioning from the Millennium Development Goal to the Sustainable Development Goal era, it is imperative to comprehensively assess progress toward reducing maternal mortality to identify areas of success, remaining challenges, and frame policy discussions. We aimed to quantify maternal mortality throughout the world by underlying cause and age from 1990 to 2015.

Methods We estimated maternal mortality at the global, regional, and national levels from 1990 to 2015 for ages 10–54 years by systematically compiling and processing all available data sources from 186 of 195 countries and territories, 11 of which were analysed at the subnational level. We quantified eight underlying causes of maternal death and four timing categories, improving estimation methods since GBD 2013 for adult all-cause mortality, HIV-related maternal mortality, and late maternal death. Secondary analyses then allowed systematic examination of drivers of trends, including the relation between maternal mortality and coverage of specific reproductive health-care services as well as assessment of observed versus expected maternal mortality as a function of Socio-demographic Index (SDI), a summary indicator derived from measures of income per capita, educational attainment, and fertility.

Findings Only ten countries achieved MDG 5, but 122 of 195 countries have already met SDG 3.1. Geographical disparities widened between 1990 and 2015 and, in 2015, 24 countries still had a maternal mortality ratio greater than 400. The proportion of all maternal deaths occurring in the bottom two SDI quintiles, where hereafter is the dominant cause of maternal death, increased from roughly 68% in 1990 to more than 80% in 2015. The middle SDI quintile improved the most from 1990 to 2015, but also has the most complicated causal profile. Maternal mortality in the highest SDI quintile is mostly due to other direct maternal disorders, indirect maternal disorders, and abortion, ectopic pregnancy, and/or miscarriage. Historical patterns suggest achievement of SDG 3.1 will require 95% coverage of one antenatal care visit, 78% of four antenatal care visits, 81% of in-facility delivery, and 87% of skilled birth attendance.

Interpretation Several challenges to improving reproductive health lie ahead in the SDG era. Countries should establish or renew systems for collection and timely dissemination of health data; expand coverage and improve quality of family planning services, including access to contraception and safe abortion to address high adolescent fertility; invest in intrapartum health system capacity; including coverage of routine reproductive health care and of...
MATERNAL MORTALITY IS RISING IN THE U.S. AS IT DECLINES ELSEWHERE

Deaths per 100,000 live births

U.S.A. (26.4)

U.K. (9.2)
Portugal (9)
Germany (9)
France (7.8)
Canada (7.3)
Netherlands (6.7)
Spain (5.6)
Australia (5.5)
Ireland (4.7)
Sweden (4.4)
Italy (4.2)
Denmark (4.2)
Finland (3.8)

Notes:

Source: The Lancet
Credit: Rob Weychers/ProPublica
Pregnancy-related death has more than doubled over the past 25 years.
OVER 700 WOMEN
die each year from complications related to pregnancy.

2 WOMEN
will die from pregnancy-related causes today. And every day.

50,000+ WOMEN
suffer life-threatening complications
every year during pregnancy.

BLACK WOMEN
are over three times as likely as white women
to die from pregnancy-related causes.

U.S. MATERNAL MORTALITY AND MORBIDITY
MATERNAL MORTALITY

#BLANKETCHANGE
FOR MOMS AND BABIES THIS ELECTION

Launched October 2018
Blanket Memorial on the National Mall
Pregnancy-related mortality ratio is the number of pregnancy-related deaths per 100,000 live births. A pregnancy-related death is the death of a woman during pregnancy or within one year of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy. Source: CDC, 2011-2013 (https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pmss.html)

Prepared by March of Dimes Perinatal Data Center, February 2018.

In this country black women have maternal* death rates over three times higher than women of other races.

Disparities in Maternal Death

- Black: 43.5
- White: 12.7
- Other races: 14.4

*Pregnancy-related mortality ratio is the number of pregnancy-related deaths per 100,000 live births. A pregnancy-related death is the death of a woman during pregnancy or within one year of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy. Source: CDC, 2011-2013 (https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pmss.html)

Prepared by March of Dimes Perinatal Data Center, February 2018.
Maternity Care Desert Report

Map 1. Access to Maternity Care in U.S. Counties, 2016

READ THE REPORT

#BlanketChange
OUTCOMES FOR MOMS AND BABIES ARE IMPACTED BY:

Healthcare system: Access to care, hospital & provider policies, insurance status

Personal health: Nutrition and access to healthy foods, overall health status including stress

Behavioral health: alcohol, tobacco, and drug use

Social environment: Educational status, social stress, job opportunities, work policies for families

Built environment: Housing, neighborhood safety, proximity to child care & employment
WEST VIRGINIA CASE STUDY
THE OPIOID EPIDEMIC

As a Demand-Supply Issue
Opioid Epidemic - An Evolving Crisis

Supply-side drivers

Demand-side drivers
State Opioid Prescribing Rates, 2016
Prescriptions Filled in the U.S.

Total Prescriptions filled per capita, 2016
All Products, Retail Channel

Source: QuintilesIMS Xponent, 2017
OPIOID USE AMONG WOMEN

About 1 in 3 women of reproductive age filled an opioid prescription between 2008 – 2012.

Opioid use disorder rates at delivery increased by more than 4-fold during 1999 to 2014.


OUTCOMES ASSOCIATED WITH PRENATAL OPIOID EXPOSURE

Birth Defects?

Poor Pregnancy Outcomes?

Neonatal Abstinence Syndrome (NAS)

Long Term Outcomes

Conception

Delivery

Infancy

Childhood
## Changes in Opioids Filled

### Percent Change in Filled Prescriptions, 2016 vs 2015

**Opioid Products**

<table>
<thead>
<tr>
<th>Rank</th>
<th>State</th>
<th>% Change</th>
<th>Rank</th>
<th>State</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Florida</td>
<td>0.3%</td>
<td>27</td>
<td>Washington</td>
<td>-5.6%</td>
</tr>
<tr>
<td>2</td>
<td>Georgia</td>
<td>-0.3%</td>
<td>28</td>
<td>New York</td>
<td>-6.2%</td>
</tr>
<tr>
<td>3</td>
<td>Louisiana</td>
<td>-2.2%</td>
<td>29</td>
<td>Iowa</td>
<td>-6.5%</td>
</tr>
<tr>
<td>4</td>
<td>Arkansas</td>
<td>-2.2%</td>
<td>30</td>
<td>Kentucky</td>
<td>-6.6%</td>
</tr>
<tr>
<td>5</td>
<td>Wyoming</td>
<td>-2.3%</td>
<td>31</td>
<td>California</td>
<td>-6.6%</td>
</tr>
<tr>
<td>6</td>
<td>Texas</td>
<td>-2.9%</td>
<td>32</td>
<td>Virginia</td>
<td>-6.6%</td>
</tr>
<tr>
<td>7</td>
<td>Alaska</td>
<td>-3.4%</td>
<td>33</td>
<td>New Jersey</td>
<td>-6.6%</td>
</tr>
<tr>
<td>8</td>
<td>Alabama</td>
<td>-3.5%</td>
<td>34</td>
<td>Delaware</td>
<td>-6.7%</td>
</tr>
<tr>
<td>9</td>
<td>Utah</td>
<td>-3.6%</td>
<td>35</td>
<td>Maryland</td>
<td>-7.0%</td>
</tr>
<tr>
<td>10</td>
<td>Nebraska</td>
<td>-3.9%</td>
<td>36</td>
<td>Michigan</td>
<td>-7.0%</td>
</tr>
<tr>
<td>11</td>
<td>Mississippi</td>
<td>-3.9%</td>
<td>37</td>
<td>New Mexico</td>
<td>-7.8%</td>
</tr>
<tr>
<td>12</td>
<td>Idaho</td>
<td>-4.1%</td>
<td>38</td>
<td>Oregon</td>
<td>-7.9%</td>
</tr>
<tr>
<td>13</td>
<td>Kansas</td>
<td>-4.2%</td>
<td>39</td>
<td>Colorado</td>
<td>-8.1%</td>
</tr>
<tr>
<td>14</td>
<td>Illinois</td>
<td>-4.2%</td>
<td>40</td>
<td>District of Columbia</td>
<td>-8.2%</td>
</tr>
<tr>
<td>15</td>
<td>South Carolina</td>
<td>-4.3%</td>
<td>41</td>
<td>Wisconsin</td>
<td>-8.3%</td>
</tr>
<tr>
<td>16</td>
<td>South Dakota</td>
<td>-4.7%</td>
<td>42</td>
<td>Pennsylvania</td>
<td>-8.6%</td>
</tr>
<tr>
<td>17</td>
<td>Nevada</td>
<td>-4.9%</td>
<td>43</td>
<td>Ohio</td>
<td>-9.0%</td>
</tr>
<tr>
<td>18</td>
<td>Montana</td>
<td>-5.0%</td>
<td>44</td>
<td>Minnesota</td>
<td>-9.7%</td>
</tr>
<tr>
<td>19</td>
<td>Missouri</td>
<td>-5.0%</td>
<td>45</td>
<td>Vermont</td>
<td>-10.2%</td>
</tr>
<tr>
<td>20</td>
<td>North Carolina</td>
<td>-5.1%</td>
<td>46</td>
<td>Rhode Island</td>
<td>-10.5%</td>
</tr>
<tr>
<td>21</td>
<td>Hawaii</td>
<td>-5.2%</td>
<td>47</td>
<td>Connecticut</td>
<td>-10.8%</td>
</tr>
<tr>
<td>22</td>
<td>North Dakota</td>
<td>-5.2%</td>
<td>48</td>
<td>Maine</td>
<td>-12.0%</td>
</tr>
<tr>
<td>23</td>
<td>Oklahoma</td>
<td>-5.2%</td>
<td>49</td>
<td>Massachusetts</td>
<td>-12.7%</td>
</tr>
<tr>
<td>24</td>
<td>Indiana</td>
<td>-5.3%</td>
<td>50</td>
<td>New Hampshire</td>
<td>-13.8%</td>
</tr>
<tr>
<td>25</td>
<td>Arizona</td>
<td>-5.5%</td>
<td>51</td>
<td>West Virginia</td>
<td>-15.6%</td>
</tr>
<tr>
<td>26</td>
<td>Tennessee</td>
<td>-5.6%</td>
<td>52</td>
<td>Puerto Rico</td>
<td>N/A</td>
</tr>
</tbody>
</table>

All states = -5.6% annual percentage of change

Source: QuintilesIMS Xponent, 2017

### U.S. total Opioid prescriptions

- 2015 = 227,780,915
- 2016 = 215,051,279
Prescribing Remains a Major Issue

U.S. Opioid Prescriptions: Still High Despite Recent Declines
Too many opioid prescriptions for too many days at too high a dose.

**TWO MANY DAYS**
Average prescription days supply

- **INCREASED 33%**
  - from 2006 to 2015

**TWO HIGH A DOSE**
A dose of 50 MME or more per day doubles the risk of opioid overdose death, compared to 20 MME or less.

- **2006**
- **2015**

**TWO MANY PRESCRIPTIONS**
In 2015, there were enough prescriptions for every American to be medicated around the clock for three weeks.
- [340 MME per person, which means 5 mg of hydrocodone every 4 hours]

**NATIONWIDE INCONSISTENCIES**
The total amount of opioids prescribed (per person for the year 2015) varied widely from county to county.
- **1,319 MME**
  - Average of highest 25% of US counties in 2015
- **203 MME**
  - Average of lowest 25% of US counties in 2015
Opioid Epidemic - An Evolving Crisis

Supply-side drivers

Demand-side drivers
DEMAND-SIDE FACTORS

- Community economic disadvantage
- Mental health problems
- Relational problems
- Health conditions (chronic pain, sedentary life styles, etc.)

Source: Betz, Michael. The Link Between Economic Conditions and Overdose Deaths in OH, WV, KY, PA; The Ohio State University.
Are Skills Transferable?

### Ohio’s Industries

<table>
<thead>
<tr>
<th>Industry</th>
<th>2000</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>15.4</td>
<td>10.4</td>
</tr>
<tr>
<td>Government and government enterprises</td>
<td>12.1</td>
<td>11.5</td>
</tr>
<tr>
<td>Retail trade</td>
<td>11.7</td>
<td>10.1</td>
</tr>
<tr>
<td>Health care and social assistance</td>
<td>9.9</td>
<td>12.8</td>
</tr>
<tr>
<td>Accommodation and food services</td>
<td>6.4</td>
<td>7.2</td>
</tr>
</tbody>
</table>

Source: Betz, Michael. The Link Between Economic Conditions and Overdose Deaths in OH, WV, KY, PA; The Ohio State University.
Considerations

- Half of prime age men NLF (national labor force) use daily pain medication (Krueger 2017)
- Labor force participation (LFP) is lower in and fell in counties where prescription rates are higher (Krueger 2017)
- County employment growth in low-paying industries served as a protective factor against overdose (OD) deaths, effect more for males (Betz and Jones)
- Currently 47 million workers with high school degree or less
OPPORTUNITIES FOR PREVENTION
ENSURING ACCESS TO CARE

- Protecting access to quality health insurance, including coverage for people with pre-existing conditions and the requirement that all plans cover maternity and newborn care
- Increasing access to Medicaid, including extending coverage for mothers after childbirth
- Improving access to group prenatal care through enhanced payment and other efforts
SUPPORTIVE PREGNANCY CARE

Group prenatal care:
- Reduces preterm birth among Black women by 41%; 33% reduction among women of all races/ethnicities
- Improves psychological outcomes, including readiness for labor and delivery
- Empowers women and increases satisfaction with care

March of Dimes has developed a new model of group prenatal care: Supportive Pregnancy Care
- Less costly to implement and easier to sustain
SUPPORTING HEALTHY WOMEN & HEALTHY BABIES

• Preventing maternal mortality through maternal mortality review committees, improved data collection, and related efforts, with a focus on health equity

• Preventing preterm birth and reducing disparities through efforts such as tobacco prevention and cessation, birth spacing, and access to 17P

• Advancing policies to support mothers and reduce health disparities in the workplace, such as pregnancy nondiscrimination and breastfeeding promotion
ADVANCING RESEARCH & SURVEILLANCE

• Advancing the future of newborn screening by considering testing each newborn for every condition on the Recommended Uniform Screening Panel (RUSP) and maintaining a robust birth defects surveillance system

• Promoting research to help pregnant and breastfeeding women and their health care providers know what medications are safe for them and their infants
IMPLICIT BIAS TRAINING FOR MATERNITY CARE PROVIDERS

Address unconscious attitudes and stereotypes

Improve patient-provider communications and treatment decisions

In-person training and virtual resources being developed by March of Dimes and Quality Interactions
NEONATAL ABSTINENCE SYNDROME / OPIOID CRISIS

- Avoiding punitive models in favor of a more therapeutic and treatment-based approach
- NAS surveillance based on birth defects surveillance
- Reducing excess prescribing
- Understanding the long-term outcomes of NAS: Tennessee Pilot