Racial and Ethnic Disparities in Birth Outcomes in the Military Health System

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LEARNING OBJECTIVES

At the conclusion of this activity, the participant will be able to:

1. Identify the socioeconomic and demographic characteristics of women who give birth in a universally-insured population.
2. Compare racial disparities in perinatal outcomes in a universally-insured population against national data.
3. Examine whether universal insurance mitigates any race-based disparities in maternal outcomes.
AGENDA

• Racial Disparities in the U.S.A.
• The Military Health System
• The EPIC Project
• Methods
• Results
• Discussion
RACIAL DISPARITIES IN THE U.S.A.
Maternal Mortality in the United States

Millennium Development Goal (MDG) 5 set a global commitment to reduce maternal mortality: 75% by 2015

The U.S. did not meet the target.

Which countries did meet MDGs?
- Bhutan
- Cape Verde
- Cambodia
- Iran
- Laos People’s Democratic Republic
- Maldives
- Mongolia
- Rwanda
- Timor-Leste

One reason the U.S. has not achieved MDGs: Racial Disparities in Health Outcomes

Black women in the U.S. are dying at a rate 4x higher than white women

In 2015, the United Nations adopted a new set of global goals:
The Sustainable Development Goals

These goals call on all countries to reduce their maternal mortality ratio by two-thirds and to eliminate health disparities by 2030.

What can the U.S. do to make the mark?

2. Source: CDC Pregnancy Mortality Surveillance System 2015
3. per 100,000 live births
Preterm Labor Rates by Race/Ethnicity in the United States, 2014-2016

Source: March of Dimes
TOTAL CESAREAN DELIVERIES BY MATERNAL RACE/ETHNICITY

United States, 2014-2016 Average

Percent of live births

- Hispanic: 31.8%
- White: 31.1%
- Black: 35.6%
- American Indian/Alaska Native: 28.4%
- Asian/Pacific Islander: 33.1%
- Total: 32.1%

All race categories exclude Hispanics.

MHS AND RACIAL DISPARITIES
THE U.S. MILITARY HEALTH SYSTEM

• Provides universal access and comprehensive health care
• Covers >9.5M active duty service members, dependent beneficiaries, and retirees
• 20% - active duty population
EPIC Background

Determine whether universal insurance and access to care mitigate racial disparities in perinatal outcomes among active duty service women.

Aims:

1. Evaluate whether racial disparities in maternal/newborn outcomes exist in a universally insured population
2. Identify the socioeconomic and demographic characteristics of women who give birth in a universally insured population
3. Compare racial disparities in maternal/newborn outcomes in a universally insured population against national data
METHODS

• The Military Health System Data Repository was used to identify all active duty women who delivered in MHS facilities between 2012 -2016.

• Data includes demographics, intrapartum outcomes, and newborn outcomes

• Women 17 – 54 years of age

• Branch: Army, Navy, Marines, Air Force
Perinatal Outcomes Included:

• Vaginal births
• Cesarean section births
• Vaginal births after cesarean section
• Forceps and vacuum-assisted births
• Episiotomy rates

• Laceration rates
• Postpartum hemorrhage
• Endometritis
• Re-hospitalization
Newborn Outcomes Included:

- Breastfeeding rates
- Newborn complication rates
- Low birth weight
- NICU admission
ANALYSIS

- Multivariate logistic regression
- Two-sided p value of <0.05
- SAS version 9.4
# RESULTS

Table 1: Demographics of Active Duty Women with Deliveries from FY 2012-2016, n=62,495

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent of Study Population (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;20</td>
<td>1552</td>
<td>2.48</td>
</tr>
<tr>
<td>20-24</td>
<td>23781</td>
<td>38.05</td>
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<tr>
<td>25-34</td>
<td>30545</td>
<td>48.88</td>
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<tr>
<td>35-44</td>
<td>6242</td>
<td>9.99</td>
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<tr>
<td>45-54</td>
<td>375</td>
<td>0.60</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>31926</td>
<td>51.09</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>2689</td>
<td>4.30</td>
</tr>
<tr>
<td>Black</td>
<td>15874</td>
<td>25.4</td>
</tr>
<tr>
<td>Native American/ Alaskan Native</td>
<td>547</td>
<td>0.88</td>
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<tr>
<td>Other</td>
<td>11459</td>
<td>18.34</td>
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<tr>
<td><strong>Rank</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enlisted</td>
<td>52447</td>
<td>83.92</td>
</tr>
<tr>
<td>Officers</td>
<td>10048</td>
<td>16.08</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>43828</td>
<td>70.13</td>
</tr>
<tr>
<td>Single</td>
<td>18667</td>
<td>29.87</td>
</tr>
</tbody>
</table>
# RESULTS

## Frequency of Perinatal Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Study Rates</th>
<th>National Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cesarean Section Births</td>
<td>23.9%</td>
<td>32%</td>
</tr>
<tr>
<td>Episiotomy Rate</td>
<td>9.3%</td>
<td>7.8%</td>
</tr>
<tr>
<td>Laceration Rate</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>3\textsuperscript{rd} and 4\textsuperscript{th} degree Lacerations</td>
<td>16%</td>
<td>4-13%</td>
</tr>
<tr>
<td>Induction of Labor</td>
<td>1.5%</td>
<td></td>
</tr>
<tr>
<td>Postpartum Hemorrhage</td>
<td>3.5%</td>
<td>4%</td>
</tr>
<tr>
<td>Maternal Readmission</td>
<td>1.2%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Preterm Births</td>
<td>4.6%</td>
<td>10%</td>
</tr>
</tbody>
</table>
WHAT DOES THIS MEAN FOR THE NATION?
LIMITATIONS

• Maternal mortality = 2 during study period
• Focus on healthy population without pre-existing medical conditions
• Secondary analyses
• Inability to link newborn records with maternal records in the MDR system
CONCLUSIONS

• First look at racial disparities in perinatal outcomes among active duty service women.

• Universal healthcare in this population mitigates some, but not all, race-based disparities.

• Further research needed to identify drivers other than universal insurance and access to care.
QUESTIONS?
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