2018 ANNUAL MEETING
SATURDAY PRESENTATIONS

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This continuing medical education activity is jointly provided by the American College of Obstetricians and Gynecologists.
Identifying Characteristics of Incomplete Antenatal Gestational Diabetes Mellitus Screening as Markers for Abnormal Postpartum Glucose Tolerance

Primary Investigator: Myah Griffin, MD

Sub-Investigators: Rebecca Pollack, MD, MBA
Lorene Temming, MD, MSCI
Mary Andrews, BS
Jing Zhao, MD, PhD
Disclosures

• None
Introduction

• Gestational Diabetes Mellitus is typically diagnosed in pregnancy by 3-hour glucose tolerance test.
• A postpartum glucose tolerance test is recommended to allow for diagnosis of Type 2 Diabetes Mellitus (T2DM) and follow-up for at risk women.
• We sought to determine if there are differences in the incidence of abnormal postpartum glucose testing among patients who completed a 3-hour glucose tolerance test versus those who did not.
• By identifying women at higher risk for abnormal testing we may be able to provide for targeted counseling and improve follow-up.
Introduction

• CMC Diabetes Center saw **2607 patients** for GDM teaching in **2012-2015**.
  – Of these, 1160 postpartum 2-h GTT performed.
  – Estimated compliance rate of 44%
  – Compliance rate of 25% in 2016 study*

• Risk Factors for non-compliance with postpartum GTT.¹
  – Fewer prenatal appointments
  – Missed postpartum visits
  – Not scheduling 2h GTT
  – Elevated 1-hour result on 3h GTT
  – Neonatal weight >4500g

• Those with worse control may have greater non-compliance for 2h GTT postpartum.
Research Question

“Are there differences in the incidence of abnormal postpartum glucose testing among patients who completed a three-hour glucose tolerance test versus those who did not, but were diagnosed by either an elevated 1-hour O’Sullivan test, an elevated fasting glucose, or by other means?”
Hypothesis

Patients who do not have a 3-hour GTT performed are more likely to have Impaired Glucose Tolerance or Type 2 Diabetes Mellitus postpartum.
Methods

• Retrospective chart review using a database of all women with Gestational Diabetes Mellitus (GDM) who underwent a postpartum 2-hour glucose tolerance test (GTT) at the Carolinas Medical Center Diabetes Center between 2012-2015.
Methods

• We compared outcomes between those diagnosed with GDM by the 3-hour GTT vs. those diagnosed by other means.
  – Elevated random glucose
  – Elevated A1c
  – History of GDM
  – History of PCOS
  – History of Fetal Macrosomia

• Exclusion criteria:
  – Testing greater than 12 weeks postpartum
  – Diagnosed by an antepartum 2-hour GTT
  – Patients with multi-fetal gestations
  – Missing data
Methods

• Demographic and clinical characteristics between groups were compared with chi-square and Fisher exact test for categorical and Wilcoxon rank sum test for continuous variables using SAS v6.1.
Results

Exclusion criteria:
- Testing greater than 12 weeks postpartum
- Diagnosed by an antepartum 2-hour GTT
- Patients with multi-fetal gestations

Eligible Patients (n = 1,214) → Excluded (n = 306)

Met Inclusion Criteria (n = 908)

With 3-hour GTT (n = 522) → Without 3-hour GTT (n = 386)
• Of the patients who did not have a 3-hour GTT:
  – 87% were diagnosed by an elevated 1-hour O’Sullivan test and subsequent elevated blood glucose.
Results

Table 1. Demographic Characteristics in Patients Undergoing 2-hour Postpartum Glucose Tolerance Testing 2012-2015

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>With 3h GTT (N=522)</th>
<th>Without 3h GTT (N=386)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yrs)</td>
<td>32.3±4.6</td>
<td>32.9±4.8</td>
<td>0.09†</td>
</tr>
<tr>
<td>Pre-Pregnancy BMI</td>
<td>27.6±6.6</td>
<td>28.4±7.3</td>
<td>0.12†</td>
</tr>
<tr>
<td>BMI at 2h GTT</td>
<td>33.5±11.7</td>
<td>28.9±6.8</td>
<td>0.25†</td>
</tr>
<tr>
<td>Total Pregnancy Weight Gain (lbs)</td>
<td>24.0±13.9</td>
<td>23.7±12.6</td>
<td>0.42†</td>
</tr>
<tr>
<td>Days from Delivery to 2h GTT</td>
<td>57.8±11.0</td>
<td>77.8±63.7</td>
<td>&lt;0.01†</td>
</tr>
<tr>
<td>Gestational Age at Delivery (yrs)</td>
<td>38.8±1.2</td>
<td>49.1±20.7</td>
<td>0.17†</td>
</tr>
<tr>
<td>Infant Birthweight (g)</td>
<td>3310.0±498.3</td>
<td>3241.1±495.8</td>
<td>0.11†</td>
</tr>
</tbody>
</table>

Race, %

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>African American</th>
<th>Asian</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>325 (62.3)</td>
<td>62 (11.9)</td>
<td>71 (3.6)</td>
<td>60 (11.5)</td>
</tr>
<tr>
<td>Breastfeeding, %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exclusively breast</td>
<td>290 (55.6)</td>
<td>222 (57.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formula</td>
<td>124 (23.8)</td>
<td>95 (24.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both</td>
<td>103 (19.7)</td>
<td>67 (17.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced Maternal Age, %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age &lt; 35</td>
<td>157 (30.1)</td>
<td>247 (64)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age ≥ 35</td>
<td>365 (69.9)</td>
<td>139 (36)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean ± SD, count (%) were used to describe continuous and categorical variables, respectively.
+ There are overlaps between groups.
Test used: †Wilcoxon test; ‡Chi-square test; §exact test.
Results

Table 2. Clinical Characteristics in Patients Undergoing 2-hour Postpartum Glucose Tolerance Testing 2012-2015

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>With 3h GTT (N=522)</th>
<th>Without 3h GTT (N=386)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days from Delivery to 2h GTT</td>
<td>57.8±11.0</td>
<td>77.8±63.7</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td>1h GTT Value</td>
<td>159.0±17.1</td>
<td>199.3±31.7</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td>History of GDM, %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>47 (9)</td>
<td>102 (26.4)</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td>No</td>
<td>465 (89.1)</td>
<td>272 (70.5)</td>
<td></td>
</tr>
<tr>
<td>Insulin Requiring, %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>308 (59)</td>
<td>273 (70.7)</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td>No</td>
<td>214 (41)</td>
<td>113 (29.3)</td>
<td></td>
</tr>
<tr>
<td>Excess Weight Gain, %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>165 (31.6)</td>
<td>127 (32.9)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>328 (62.8)</td>
<td>256 (66.3)</td>
<td>0.92*</td>
</tr>
<tr>
<td>Both</td>
<td>103 (19.7)</td>
<td>67 (17.4)</td>
<td>0.64*</td>
</tr>
</tbody>
</table>

Mean ± SD, count (%) were used to describe continuous and categorical variables, respectively.

*: There are overlaps between groups.
Test used: *Wilcoxon test; ‡Chi-square test; §exact test.

- Of the patients who did not have a 3-hour GTT:
  - A higher 1-hour GTT glucose level (199 vs. 159, p<.01) in addition to 70% requiring insulin (v. 59%, p<.01).
  - Three-times increased rate of prior GDM diagnosis (26 vs. 9%, p<.01).
Results

Graph 1. Postpartum Diabetes by Groups with and without a 3h GTT
Results

Graph 2. Postpartum Diabetes by Groups with and without a 3h GTT

A higher incidence of postpartum impaired glucose tolerance (IGT) and T2DM (OR 1.37 CI 1.02-1.84) versus those diagnosed by the 3-hour GTT.
Conclusion

• Patients diagnosed by alternative means have a higher incidence of IGT and DM postpartum.
• Most of these women were diagnosed in pregnancy by an elevated 1-hour O’Sullivan test and/or historical risk factors, most notable was history of GDM.
• This reinforces that these women are at higher risk and should be screened carefully in pregnancy and postpartum.
Acknowledgements

• Rebecca Pollack, MD, MBA
• Lorene Temming, MD, MSCI
• Mary Andrews B.S.
• Jing Zhao, MD, PhD
References

1. Risk Factors Associated With Noncompliance of the Postpartum Oral Glucose Tolerance Test, Tobiasz, Ana MD; Talbot, Abigail MD; Freeman, Audrey; Gomez, Luis M. MD Obstetrics & Gynecology: May 2016
The Effect of Intrapartum Oxytocin Duration and Dose on Postpartum Hemorrhage Risk

Lindsay Speros Robbins, MD, MPH
• No disclosures or COI

• Learning Objectives
  – Review maternal morbidity trends in the US
  – Discuss quality improvement initiative at our institution to reduce postpartum hemorrhage (PPH)
  – Explore potential relationships between intrapartum oxytocin use and PPH risk
Background: Postpartum Hemorrhage

Background: Postpartum Hemorrhage

Background: Postpartum Hemorrhage


Rate of severe maternal morbidity per 10,000 delivery hospitalizations

Overall rate of severe maternal morbidity with blood transfusions
Blood transfusions
Severe maternal morbidity without blood transfusions

Reducing Obstetric Hemorrhage: Implementation of a Peripartum Hemorrhage Reduction Bundle

- Large, multidisciplinary QI project

- Goal:
  - reduce hemorrhage rates from 8.5% to 4%
  - reduce transfusion rates from 3% to 1.5%
Reducing Obstetric Hemorrhage:
Implementation of a Peripartum Hemorrhage Reduction Bundle

• Interventions:
  – Hemorrhage protocol
  – Simulations/drills
  – Hemorrhage carts
  – Clinical education
    • Badge cards
    • LMS modules
  – Structured debriefings
  – Anonymous provider observations
  – Retrospective chart review
Study Objectives

• To define independent risk factors for postpartum hemorrhage at our hospital

• To assess for differences in intrapartum oxytocin dosing among women who experienced postpartum hemorrhage and women who did not
Hypothesis

• Women experiencing postpartum hemorrhage will have been exposed to
  – a longer duration of intrapartum oxytocin,
  – higher cumulative dose of intrapartum oxytocin,
  – or both.
OBSTETRICS

Oxytocin exposure during labor among women with postpartum hemorrhage secondary to uterine atony

Chad A. Grotegut, MD; Michael J. Paglia, MD, PhD; Lauren N. C. Johnson, MD; Betty Thames, RN, BS; Andra H. James, MD, MPH

Oxytocin during labour and risk of severe postpartum haemorrhage: a population-based, cohort-nested case–control study

Jérémie Belghiti,1 Gilles Kayem,1 Corinne Dupont,2 René-Charles Rudigoz,2 Marie-Hélène Bouvier-Colle,1 Catherine Deneux-Tharaux1
Study Design

• Retrospective case-control study
• Approved by UNC IRB

• Cases
  – Perinatal Database
  – Definition: estimated blood loss \( \geq 1 \) Liter
  – March – July 2015

• Controls
  – Definition: estimated blood loss \( < 1 \) Liter
  – Same time frame, randomly generated
Methods

• Abstracted from EPIC

• Managed in REDCap

• Analyzed in Stata
Methods

• Demographic, antepartum and intrapartum characteristics were compared using chi-square or Fisher’s exact tests

• Multivariable logistic regression modeling was used to quantify the effect of oxytocin dose and duration on PPH
Results: Study Population

Deliveries at UNC March – July 2015 (n = 1490)

- Cases of postpartum hemorrhage, received from Perinatal Database, defined as EBL > 1L (n = 117)
- Controls received from the Perinatal Database, defined as EBL < 1L, randomly generated

Total PPH Cases (n = 92)

Total Controls (n = 92)

Excluded:
- MRN not found in EPIC (n = 1)
- MRN without record of delivery (n = 1)
- Criteria for PPH not met (n = 23)
## Results:
### Demographics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Women with Postpartum Hemorrhage n = 92 (%)</th>
<th>Women without Postpartum Hemorrhage n = 92 (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median maternal age (IQR)</td>
<td>30 (26, 34.5)</td>
<td>32 (26, 35)</td>
<td>0.18</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td>0.48</td>
</tr>
<tr>
<td>White / other</td>
<td>46 (51.1)</td>
<td>54 (58.7)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>18 (20)</td>
<td>13 (14.1)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>26 (28.9)</td>
<td>25 (27.2)</td>
<td></td>
</tr>
<tr>
<td>Median parity (IQR)</td>
<td>2.0 (1.0, 3.0)</td>
<td>2.0 (1.0, 3.0)</td>
<td>0.37</td>
</tr>
<tr>
<td>Nulliparity</td>
<td>28 (30.4)</td>
<td>19 (20.7)</td>
<td>0.13</td>
</tr>
<tr>
<td>Grandmultiparity</td>
<td>5.0 (5.4)</td>
<td>5.0 (5.4)</td>
<td>&gt;0.99</td>
</tr>
<tr>
<td>Prenatal care</td>
<td></td>
<td></td>
<td>0.58</td>
</tr>
<tr>
<td>Low risk</td>
<td>40 (43.5)</td>
<td>47 (51.1)</td>
<td></td>
</tr>
<tr>
<td>Medium risk</td>
<td>19 (20.1)</td>
<td>16 (17.4)</td>
<td></td>
</tr>
<tr>
<td>High risk</td>
<td>33 (35.9)</td>
<td>29 (31.5)</td>
<td></td>
</tr>
<tr>
<td>Median BMI (IQR)</td>
<td>31.1 (28, 35.3)</td>
<td>30.2 (27.3, 34.3)</td>
<td>0.23</td>
</tr>
<tr>
<td>Obesity</td>
<td>58 (63)</td>
<td>50 (54.4)</td>
<td>0.30</td>
</tr>
<tr>
<td>Diabetes</td>
<td>14 (15.2)</td>
<td>3.0 (3.3)</td>
<td>0.009</td>
</tr>
<tr>
<td>Multiple gestation</td>
<td>9.0 (9.8)</td>
<td>2.0 (2.2)</td>
<td>0.058</td>
</tr>
<tr>
<td>Median GA at delivery (IQR)</td>
<td>39.1 (37, 40.6)</td>
<td>39.2 (38.2, 40.7)</td>
<td>0.15</td>
</tr>
<tr>
<td>Preterm delivery</td>
<td>19 (20.7)</td>
<td>6.0 (6.5)</td>
<td>0.009</td>
</tr>
<tr>
<td>Postdates delivery</td>
<td>14 (15.2)</td>
<td>14 (15.2)</td>
<td>&gt;0.99</td>
</tr>
</tbody>
</table>

Abbreviations: IQR interquartile range, BMI body mass index, GA gestational age

1. Five or more births >20 weeks including current delivery
2. Women’s Primary (attending practice), UNC Midwives, UNC Family Medicine, Women’s I Center (midwives)
3. County Health Department
4. UNC Maternal-Fetal Medicine, Women’s Specialty (resident practice), Department of Care
5. BMI ≥ 30 at time of admission for delivery
6. Gestational and pregestational diabetes combined
7. Delivery < 37 weeks 0 days gestation
8. Delivery > 41 weeks 0 days gestation
### Results: Demographics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Women with Postpartum Hemorrhage n = 92 (%)</th>
<th>Women without Postpartum Hemorrhage n = 92 (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median maternal age (IQR)</td>
<td>30 (26, 34.5)</td>
<td>32 (26, 35)</td>
<td>0.18</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td>0.48</td>
</tr>
<tr>
<td>White / other</td>
<td>46 (51.1)</td>
<td>54 (58.7)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>18 (20)</td>
<td>13 (14.1)</td>
<td></td>
</tr>
</tbody>
</table>

| Diabetes                       | 14 (15.2)                                  | 3.0 (3.3)                                     | 0.009   |
| Nulliparity                    | 28 (30.4)                                  | 19 (20.7)                                     | 0.13    |

| Preterm delivery               | 19 (20.7)                                  | 6.0 (6.5)                                     | 0.009   |
| Medium risk                    | 19 (20.1)                                  | 16 (17.4)                                     |         |
| High risk                      | 33 (35.9)                                  | 29 (31.5)                                     |         |

| Multiple gestation             | 9.0 (9.8)                                  | 2.0 (2.2)                                     | 0.058   |
| Obesity                        | 58 (63)                                    | 50 (54.4)                                     | 0.30    |
| Diabetes                       | 14 (15.2)                                  | 3.0 (3.3)                                     | 0.009   |
| Multiple gestation             | 9.0 (9.8)                                  | 2.0 (2.2)                                     | 0.058   |
| Median GA at delivery (IQR)    | 39.1 (37, 40.6)                            | 39.2 (38.2, 40.7)                             | 0.15    |
| Preterm delivery               | 19 (20.7)                                  | 6.0 (6.5)                                     | 0.009   |
| Postdates delivery             | 14 (15.2)                                  | 14 (15.2)                                     | >0.99   |

Abbreviations: IQR interquartile range, BMI body mass index, GA gestational age

1 Five or more births >20 weeks including current delivery
2 Women’s Primary (attending practice), UNC Midwifes, UNC Family Medicine, Women’s Center (midwives)
3 County Health Department
4 UNC Maternal-Fetal Medicine, Women’s Specialty (residency program), Department of Women’s Care
5 BMI ≥ 30 at time of admission for delivery
6 Gestational and pregestational diabetes combined
7 Delivery < 37 weeks 0 days gestation
8 Delivery > 41 weeks 0 days gestation
# Results: Admission & Intrapartum Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Women with Postpartum Hemorrhage n = 92 (%)</th>
<th>Women without Postpartum Hemorrhage n = 92 (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preeclampsia/gestational hypertension</td>
<td>22 (23.9)</td>
<td>15 (16.3)</td>
<td>0.27</td>
</tr>
<tr>
<td>Chorioamnionitis</td>
<td>12 (13)</td>
<td>4.0 (4.4)</td>
<td>0.064</td>
</tr>
<tr>
<td>Prolonged second stage(^1)</td>
<td>10 (10.9)</td>
<td>9.0 (9.8)</td>
<td>&gt;0.99</td>
</tr>
<tr>
<td>Oxytocin</td>
<td></td>
<td></td>
<td>0.055</td>
</tr>
<tr>
<td>No oxytocin</td>
<td>58 (63)</td>
<td>46 (50)</td>
<td></td>
</tr>
<tr>
<td>Oxytocin for induction</td>
<td>26 (28.3)</td>
<td>27 (29.4)</td>
<td></td>
</tr>
<tr>
<td>Oxytocin for augmentation</td>
<td>8.0 (8.7)</td>
<td>19 (20.7)</td>
<td></td>
</tr>
<tr>
<td>Mode of delivery</td>
<td></td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Spontaneous vaginal</td>
<td>25 (27.2)</td>
<td>67 (72.8)</td>
<td></td>
</tr>
<tr>
<td>Operative vaginal</td>
<td>3.0 (3.3)</td>
<td>11 (12)</td>
<td></td>
</tr>
<tr>
<td>Cesarean section</td>
<td>64 (69.6)</td>
<td>14 (15.2)</td>
<td></td>
</tr>
<tr>
<td>Infant weight ≥ 4,000 grams</td>
<td>12 (13)</td>
<td>10 (10.9)</td>
<td>0.82</td>
</tr>
</tbody>
</table>

Abbreviations: IQR interquartile range
\(^1\) Greater than or equal to two hours from complete dilation to delivery
### Results: Admission & Intrapartum Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Women with Postpartum Hemorrhage n = 92 (%)</th>
<th>Women without Postpartum Hemorrhage n = 92 (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preeclampsia/gestational hypertension</td>
<td>22 (23.9)</td>
<td>15 (16.3)</td>
<td>0.27</td>
</tr>
<tr>
<td>Chorioamnionitis</td>
<td>12 (13)</td>
<td>4.0 (4.4)</td>
<td>0.066</td>
</tr>
<tr>
<td><strong>Mode of delivery</strong></td>
<td></td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Spontaneous vaginal</td>
<td>25 (27.2)</td>
<td>67 (72.8)</td>
<td></td>
</tr>
<tr>
<td>Operative vaginal</td>
<td>3.0 (3.3)</td>
<td>11 (12)</td>
<td></td>
</tr>
<tr>
<td>Cesarean section</td>
<td>64 (69.6)</td>
<td>14 (15.2)</td>
<td></td>
</tr>
</tbody>
</table>

| Oxytocin for augmentation             | Oxytocin for augmentation                   |                                                |         |
|---------------------------------------|--------------------------------------------|                                                |         |
| **Mode of delivery**                  |                                            |                                                | <0.001  |
| Spontaneous vaginal                   | 25 (27.2)                                  | 67 (72.8)                                      |         |
| Operative vaginal                     | 3.0 (3.3)                                  | 11 (12)                                        |         |
| Cesarean section                      | 64 (69.6)                                  | 14 (15.2)                                      |         |
| Infant weight ≥ 4,000 grams           | 12 (13)                                    | 10 (10.9)                                      | 0.82    |

Abbreviations: IQR interquartile range

*Greater than or equal to two hours from complete dilation to delivery*
Results: Oxytocin administration among cases / controls

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Women with Postpartum Hemorrhage (n=92)</th>
<th>Women without Postpartum Hemorrhage (n=92)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxytocin duration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median oxytocin duration, min (IQR)</td>
<td>0 (0, 693)</td>
<td>39 (0, 520)</td>
<td>0.001</td>
</tr>
<tr>
<td>Received ≥75th %ile of oxytocin duration, n (%)</td>
<td>14 (15.2)</td>
<td>8 (8.7)</td>
<td>0.17</td>
</tr>
<tr>
<td>Oxytocin dose</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median total oxytocin dose, mU (IQR)</td>
<td>0 (0.4647)</td>
<td>66.5 (0, 4269)</td>
<td>0.75</td>
</tr>
<tr>
<td>Received ≥75th %ile of total oxytocin dose, n (%)</td>
<td>13 (14.1)</td>
<td>9 (9.8)</td>
<td>0.36</td>
</tr>
<tr>
<td>Other oxytocin parameters</td>
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<td></td>
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</tr>
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*Abbreviations: IQR interquartile range, min minute, %ile percentile, mU milliunit*
## Results: Logistic Regression

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<th></th>
<th>aOR</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cumulative oxytocin time</strong>*</td>
<td>1.0</td>
<td>0.99, 1.00</td>
<td>0.22</td>
</tr>
<tr>
<td><strong>Long oxytocin time (≥75th %ile)</strong>*</td>
<td>1.9</td>
<td>0.61, 5.82</td>
<td>0.27</td>
</tr>
<tr>
<td><strong>Cumulative oxytocin dose</strong></td>
<td>1.0</td>
<td>0.99, 1.00</td>
<td>0.32</td>
</tr>
<tr>
<td><strong>High oxytocin dose (≥75th %ile)</strong></td>
<td>1.4</td>
<td>0.45, 4.15</td>
<td>0.59</td>
</tr>
</tbody>
</table>

Abbreviations: %ile percentile

*controlled for diabetes, preterm delivery, mode of delivery, and indication for oxytocin

**controlled for diabetes, preterm delivery, mode of delivery
Discussion

- From this analysis, we do not show harm associated with increased dose or duration of oxytocin for augmentation or induction
Discussion

• Strengths
  – Baseline against which to compare our post-intervention cases

• Weaknesses
  – Reliance on estimated blood loss
  – Retrospective data
Discussion

• Next steps...
  – Assess for cut point
  – Ongoing QI interventions
  – Reassessment after QI interventions
Thank you.

• Sarah Dotters-Katz, MD, David Stamilio, MD, MSCE, Laura Carlson, MD
• Entire PPH QI team
  – Thomas Ivester, MD, MPH
  – M. Kathryn Menard, MD, MPH
  – Shelley Summerlin-Long, RN, MPH, MSW
  – Rebeccah Bartlett, CNM, MPH
• Henry, Henry, and Calder

Questions?
References


• Stata, version 14.0; Stata Corporation, College Station, TX.

Deviation from Gestational Weight Gain Guidelines in the Obese Gravida: An Adverse Impact on Maternal and Fetal Health*

Olivia Hostetter, MD,

*In press J Reprod Med 2018
Learning Objectives

1. To understand IOM (Institute of Medicine) Weight Gain Guidelines

2. To understand the impact of the obese gravida on maternal and fetal health

3. To understand the need of providing consistent counseling by healthcare providers about proper gestational weight gain
Disclosures

I have nothing to disclose.
Hypothesis:

Nonadherence to IOM guidelines for GWG will impart adverse effects on fetal growth, maternal health status, preterm birth, and c/s rates.
Materials and Methods

- Retrospective cohort study
- Obese women
- Referred to Wake Forest University Perinatology for prenatal care and ultrasound from 1/2012-4/2015

- Excluded women:
  - No prenatal care under our supervision,
  - Late referral,
  - Major structural fetal anomalies/chromosomal abnormality,
  - Abnormal placentation,
  - <6 prenatal visits with our group,
  - Or delivery at an OSH
## IOM WEIGHT GAIN GUIDELINES

<table>
<thead>
<tr>
<th>Prepregnancy BMI</th>
<th>Total Weight Gain Range in Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight (BMI &lt; 18.5)</td>
<td>28-40</td>
</tr>
<tr>
<td>Normal (BMI 18.5 - 24.9)</td>
<td>25-35</td>
</tr>
<tr>
<td>Overweight (BMI 25 – 29.9)</td>
<td>15-25</td>
</tr>
<tr>
<td>Obese (BMI≥30)</td>
<td>11-20</td>
</tr>
</tbody>
</table>
OUTCOME MEASURES & STATISTICS

• **Primary outcomes:**
  ✓ adherence to IOM guidelines for gestational weight gain,
  ✓ fetal growth pattern
  ✓ mode of delivery.

• **Secondary outcomes:** preE/GHTN, GDM, BW, GA at delivery, and postpartum weight retention.

• **STATA and GraphPad software utilized**
  • Variables were dichotomized (eg, GWG strata groups, binary outcomes) where appropriate
  • Distribution was assessed
  • Univariate and multivariate analysis used where appropriate
  • Significance was accepted at a p<0.05
Patient Enrollment & GWG Strata*

589 OBESE GRAVIDA

310 patients enrolled in WFUP for prenatal care <20 wks GA

279 EXCLUDED*

INADEQUATE WEIGHT GAIN (n=96; <10 lbs)

APPROPRIATE WEIGHT GAIN (n=76; 11-20 lbs)

EXCESS WEIGHT GAIN (n=138; 21+ lbs)

*Exclusions due to the following: 1) enrollment in prenatal care/delivery with outside practice or referred to our practice later than 20 weeks gestation (n=211); 2) less than 6 prenatal visits and/or delivered at outside hospital (n=55); 3) abnormal placentation (n=8); 4) history of prior classical cesarean section (n=5); 5) fetuses with major structural defects or chromosomal abnormality (n=0).

*In press, J Reprod Med 2018
## Demographics*

<table>
<thead>
<tr>
<th></th>
<th>Inadequate Weight Gain (96)</th>
<th>Appropriate Weight Gain (76)</th>
<th>Excessive Weight Gain (138)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gravidity (median, IQ range)</td>
<td>3 (2,5)</td>
<td>3 (2,5)</td>
<td>3 (2,4)</td>
<td>p=0.202</td>
</tr>
<tr>
<td>Parity (median, IQ range)</td>
<td>1 (0,3)</td>
<td>2 (1,3)</td>
<td>1 (0,2)</td>
<td>p=0.160</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td>p=0.476</td>
</tr>
<tr>
<td>Caucasian</td>
<td>46 (47.9%)</td>
<td>27 (35.5%)</td>
<td>56 (40.6%)</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>37 (38.5%)</td>
<td>34 (44.7%)</td>
<td>60 (43.5%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>12 (12.5%)</td>
<td>15 (19.7%)</td>
<td>22 (15.9%)</td>
<td></td>
</tr>
<tr>
<td>Intake BMI (median, IQ range)</td>
<td>43.1 (38.2,47.7)</td>
<td>40.2 (36.2,43.8)</td>
<td>38.4 (34.8,44.7)</td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td>Pre-gestational Diabetes</td>
<td>16 (16.7%)</td>
<td>11 (14.5%)</td>
<td>20 (14.5%)</td>
<td>p=0.885</td>
</tr>
<tr>
<td>Chronic Hypertension</td>
<td>17 (17.7%)</td>
<td>19 (25%)</td>
<td>36 (26.1%)</td>
<td>p=0.300</td>
</tr>
<tr>
<td>Tobacco use</td>
<td>21 (21.9%)</td>
<td>19 (25%)</td>
<td>31 (22.5%)</td>
<td>p=0.877</td>
</tr>
<tr>
<td>Non-Tobacco Substance Abuse</td>
<td>6 (6.3%)</td>
<td>6 (7.9%)</td>
<td>12 (8.7%)</td>
<td>p=0.788</td>
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*In press, J Reprod Med 2018
# Outcomes by GWG Strata*

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<th>P-value$^\xi$</th>
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<tr>
<td><strong>Hypertensive Disorders of Pregnancy</strong></td>
<td>15 (15.6%)</td>
<td>8 (11.8%)</td>
<td>28 (20.3%)</td>
<td>0.177</td>
</tr>
<tr>
<td><strong>Gestational Diabetes</strong></td>
<td>18 (18.8%)</td>
<td>10 (13.2%)</td>
<td>22 (15.9%)</td>
<td>0.611</td>
</tr>
<tr>
<td><strong>Indicated Delivery</strong></td>
<td>35/57 (61.4%)</td>
<td>22/41 (53.7%)</td>
<td>49/81 (60.5%)</td>
<td>0.708</td>
</tr>
<tr>
<td><strong>Cesarean Delivery</strong></td>
<td>49/82 (59.8%)</td>
<td>26/66 (39.4%)</td>
<td>64/119 (53.8%)</td>
<td>0.042</td>
</tr>
<tr>
<td><em><em>Gestational Age at Delivery$^\psi$, wks (median, IQ</em>$^</em>$ range)**</td>
<td>39.0 (37.3,39.1)</td>
<td>38.7 (37.7,39.3)</td>
<td>39.0 (37.0,39.1)</td>
<td>0.659</td>
</tr>
<tr>
<td><strong>Birthweight $^\psi$ (grams) (median, IQ range)</strong></td>
<td>3300 (2818,3745)</td>
<td>3302 (2917,3676)</td>
<td>3340 (2880,3720)</td>
<td>0.945</td>
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*In press, J Reprod Med 2018
In a linear regression model by gestational weight gain (GWG), fetuses demonstrated a relatively accelerated growth pattern in context of excessive GWG ((p=0.027, OR 3.11, 95% CI 1.13, 8.54).
Discussion

- In an already at-risk group, 3 out of 4 of the obese gravida in our study deviated from the recommended weight gain guidelines endorsed by the IOM.

- Our data indicate that non-adherence to IOM guidelines leads to increased risk of cesarean delivery with labor – whether spontaneous or induced.

- This provides strong evidence to encourage expectant mothers to aim for the target range provided by the IOM guidelines.

- We also observed breastfeeding was beneficial from the maternal standpoint by decreasing postpartum weight retention.
Conclusions/Implications

- more consistent counseling by healthcare providers about proper GWG.
- Breastfeeding should be encouraged
- need for expert preconception and early prenatal counseling
- Rate of indicated preterm births in obese women may be modifiable with GWG adherence
- collaborative efforts with weight management /bariatric medicine/exercise & diet centers may augment OB care and improve pregnancy outcome
COMPARISON OF EMERGENCY ROOM VISITS AND HOSPITAL ADMISSIONS AFTER HYSTERECTOMY IN ACADEMIC AND PRIVATE PRACTICES

Harris Wexler DO, Keith Nelson MD, Charles Hodson PhD
Disclosures

• I have no disclosures.
Learning Objectives

• To identify risk factors associated with the patient population served by Vidant Medical Center and ECU following hysterectomy
• Compare differences in patient populations served by the private and medical school practices
• Consider solutions to reduce unnecessary postoperative ED visits
Introduction:

- Retrospective cohort study analyzing emergency department visits and hospital readmissions after hysterectomies performed at Vidant Medical Center for benign indications between April 1, 2014-April 1, 2016.
- Our goal was to clarify risk factors and patient trends that may be related to ED and hospital admission in our patient population.
- We reasoned that identification of these risk factors could lessen the number of postoperative readmissions in the population served by VMC.
Materials & Methods

• Retrospective Cohort Study

• Included all routes of hysterectomy (vaginal, laparoscopic, laparoscopic assisted vaginal, abdominal and robotic routes).

• Data extracted from the charts included: Practice type, date of service, Attending Surgeon, route of surgery, indication for surgery, BMI, past medical & surgical history, emergency room visit, hospital readmission, nature of the chief complaint on admission, conversion rate for hysterectomy, treatments during readmission, surgical complications and estimated blood loss at surgery.

• This data was analyzed using Chi square analysis, T tests and ANOVA procedures with the NCSS 2007 software program.
Results:

• 1209 hysterectomies were performed, of these 948 cases were planned surgeries for benign indications.
• Post-operatively, 89 patients presented for ED visit.
• 60 were medical school patients and 26 were private practice patients.
• The percentage of medical school patients returning to the ED was significantly higher than private practice groups p< 0.05.
• Average BMIs were significantly greater in the medical school practice  p<0.05.
• A higher percentage of private patients who presented to the ED were more like to be fully admitted to the hospital after ED visit.
• A conversion of surgical route, a history of pre-existing psychosomatic complaints and diabetes mellitus were not statistically different amongst practice types nor influence the incidence of ED visits.
Route of Hysterectomy
DIABETES AND HOSPITAL READMISSIONS

HDAM=NO
HDAM=YES

NO HX DIABETES
HX DIABETES
HISTORY OF SOMATIC COMPLAINTS AND HOSPITAL ADMISSION

HADM=NO

HADM=YES

HXPSY=NO  HXPSY=YES
Patient BMI

- Underweight
- Normal
- Owt
- Obese

HADM=NO vs. HADM=YES
Percentage of ED Admission by Service

ED ADM=NO

ED ADM=YES

MS

PR
PERCENTAGE OF PATIENTS ADMITTED TO HOSPITAL CARE AFTER EMERGENCY DEPARTMENT ADMISSION

- HADM=NO
- HADM=YES

[Bar chart showing percentage distribution for MS and PR under different HADM categories]
Discussion:

• This study showed differences in the medical school and private practices in rates of post-operative rates ED visits and hospital readmission after hysterectomy. The presence of pre-existing diabetes and psycho-somatic disorders did not influence the frequency of ED visits.

• There was significant difference in those patients who presented to the ED and went on to be fully admitted in the private and medical school practices.

• We cannot explain these differences on the basis of patient morbidity.

• There may be differences in the health literacy of the patients in the different practices, as well as the pre-operative counseling provided by the practices. Most patients in the medical school practice are worked up and counseled by residents. Further research is needed to reduce unnecessary ED returns in Eastern NC.
References:


Acknowledgements

• Thank you to Dr. Nelson, my program director and mentor, for his guidance and teaching throughout residency
• Thank Dr. Hodson your help and guidance during this research project
Buprenorphine versus Buprenorphine and Naloxone for the Treatment of Opioid Use Disorder in Pregnancy
Disclosures

- None
Learning Objectives

- Recognize the increasing rates of opioid use disorder in the general and pregnant populations
- Understand the risks associated with opioid use disorder in pregnancy including the risk for neonatal abstinence syndrome
- Gain basic understanding of treatment options for opioid use disorder in pregnancy
- Review data from a retrospective cohort study comparing treatment of opioid use disorder with buprenorphine only vs. combined buprenorphine/naloxone
Opioid Epidemic

- 115 Americans die every day from opioid overdose (42,000 in 2016)\(^1\)

- In 2015, 1.8% of pregnant women admitted to using illicit drugs other than THC\(^2\)

- There has been a five-fold increase in the rate of Neonatal Abstinence Syndrome (NAS) from 2000-2012\(^3\)

Age-Adjusted death rate per 100,000 people. In North Carolina, increased from 15.8 in 2015 to 19.7 in 2016 (24.7% increase). CDC Drug Overdose Death Data.
Treatment of Opioid Use Disorder in Pregnancy

Treatment Options

- Methadone
  - Full mu agonist
- Buprenorphine only (Subutex)
  - Partial mu agonist with high affinity
- Combined
  - Buprenorphine/Naloxone (Suboxone, Zubsolv)
    - Naloxone component may decrease misuse and diversion
    - Buccal vs. IV Naloxone
Treatment of Opioid Use Disorder in Pregnancy

Benefits of Treatment\textsuperscript{4-5}

- Decreased withdrawal
- Decreased risk taking behavior
- Decreased transmission of disease (HIV, Hepatitis B/C, etc.)
- Increased use of medical care (prenatal, psychiatric, social services)
- Decreased rates of:
  - Fetal growth restriction
  - Placental abruption
  - Preterm labor
  - Meconium
  - Fetal death
Historically, FDA and SAMHSA (Substance Abuse and Mental Health Services Administration) both recommended treatment with buprenorphine only.

- Concern for withdrawal
- Limit medication exposure during pregnancy
- Limited safety data for naloxone

Current recommendation: shared-decision making regarding r/b. Buprenorphine/Naloxone may be reasonable.\textsuperscript{6-11}
Buprenorphine vs. Buprenorphine + Naloxone

- Retrospective Cohort Study
- Jan 2014 – March 2017
- 124 mother-infant dyads
  - Buprenorphine only: 86 dyads
  - Bup/Naloxone: 38 dyads
- Baseline characteristics were not statistically significant between groups
Outcomes

Maternal
- Number of prenatal visits
- New pregnancy comorbidity
  - Gestational diabetes
  - Gestational hypertension
- UDS positive for prescribed MAT only at delivery admission
- Cesarean delivery
- Length of hospital stay

Neonatal
- Diagnosis of NAS requiring treatment
- Preterm delivery (<37wks)
- Birthweight
- Length
- Head Circumference
- APGAR at 1 and 5 minutes
- Length of hospital stay
Results and Conclusions

- No statistically significant difference in maternal or neonatal outcomes between buprenorphine monoprodut and combination buprenorphine/naloxone product.

- Buprenorphine/Naloxone may be an acceptable medication for assisted treatment in pregnancy but larger scale randomized controlled trials are needed.
Perceived benefits of combination Buprenorphine/Naloxone

- First line coverage by NC Medicaid: leads to quicker access, no need for prior authorization
- Relieves need to transition patient to and from different formulations during and after pregnancy
- Decreased diversion risk (lower street value as well)
- Decreased risk of attempted IV misuse
- May alter drug related intimate partner violence risk when MAT of choice has lower street value
Study Critique

- **Strengths:**
  - Relatively large group of data compared to previous trials

- **Weaknesses:**
  - Cohort study design
  - Data collected from a larger dataset and not specifically powered to obtain primary/secondary outcome measures

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Levels of Evidence for Therapeutic Studies

<table>
<thead>
<tr>
<th>Level</th>
<th>Type of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>Systematic review (with homogeneity) of RCTs</td>
</tr>
<tr>
<td>1B</td>
<td>Individual RCT (with narrow confidence intervals)</td>
</tr>
<tr>
<td>1C</td>
<td>All or none study</td>
</tr>
<tr>
<td>2A</td>
<td>Systematic review (with homogeneity) of cohort studies</td>
</tr>
<tr>
<td>2B</td>
<td>Individual Cohort study (including low quality RCT, e.g. &lt;80% follow-up)</td>
</tr>
<tr>
<td>2C</td>
<td>“Outcomes” research; Ecological studies</td>
</tr>
<tr>
<td>3A</td>
<td>Systematic review (with homogeneity) of case-control studies</td>
</tr>
<tr>
<td>3B</td>
<td>Individual Case-control study</td>
</tr>
<tr>
<td>4</td>
<td>Case series (and poor quality cohort and case-control study)</td>
</tr>
<tr>
<td>5</td>
<td>Expert opinion without explicit critical appraisal or based on physiology bench research or “first principles”</td>
</tr>
</tbody>
</table>

*From the Centre for Evidence-Based Medicine, [http://www.cebm.net](http://www.cebm.net)*
References


NC Medicaid Transformation: The Vision for Ob-Gyn Providers and Patients

2018 Annual Meeting
North Carolina Obstetrical and Gynecological Society
NC Section of ACOG

4/21/2018

Elizabeth Cuervo Tilson, MD, MPH
State Health Director
Chief Medical Officer
NC Department of Health and Human Services
Medicaid Transformation

An opportunity to buy health
The physician has a duty to promote social conditions that conduce to physical well-being.
Buying Health

Health Care Spending

- Direct Medical Care 90%
- Other 10%

Drivers of Health

- Health Care 10%
- Environmental Exposures 5%
- Behavioral Patterns 40%
- Genetic Predisposition 30%
- Social Circumstance 15%

The opportunity to improve health lies in addressing a person’s unmet health-related resource needs.

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>55%</td>
<td>of births are unintended</td>
<td>41</td>
</tr>
<tr>
<td>47.3%</td>
<td>of women have experienced intimate partner violence</td>
<td>47</td>
</tr>
<tr>
<td>8.9%</td>
<td>of infants are low birth weight</td>
<td>41</td>
</tr>
<tr>
<td>23.7%</td>
<td>of children live in poverty</td>
<td>43</td>
</tr>
<tr>
<td>16.7%</td>
<td>of households are food insecure</td>
<td>42</td>
</tr>
<tr>
<td>30%</td>
<td>are obese</td>
<td>30</td>
</tr>
<tr>
<td>19%</td>
<td>smoke</td>
<td>33</td>
</tr>
<tr>
<td>29%</td>
<td>of low income adults went without care due to cost</td>
<td>46</td>
</tr>
</tbody>
</table>
DHHS Vision

We envision a North Carolina that optimizes health and well-being for all people by effectively stewarding resources that bridge our communities and our healthcare system.
Go as far upstream as we can

- Pre-conception health
- Planned, healthy pregnancies
- Early brain development
- Preventing Trauma/Adverse Childhood Events
- Emerging risk and cost
- Medically complex/high cost adult
Medicaid Proposed Program Design for Managed Care

• Based on best practices from other states and building on existing infrastructure in NC
• Advance high value integrated care
• Improve whole person health and well-being
• Support providers
• Build a sustainable program
Promoting Quality, Value and Population Health

• Physical and Behavioral Health Integration

• Statewide Quality Strategy that include population health metrics

• Care Management
  – Build upon existing community based infrastructure
  – Enhance resources and capabilities for providers with population health support
  – Data analytics capabilities

• Encourage alternative payment models, but with consideration to not worsen disparities

• Address health-related social needs and reduce health inequities
Medicaid Transformation and SDOH

- Care management
  - Training on Trauma Informed Care, Resource Navigation
  - Standardized screening and navigation to resources

- The State’s Quality Strategy encourages PHPs to focus on their effectiveness in screening for and addressing social issues;

- Withhold-based incentives to encourage plans to conduct SDOH required screenings and follow up

- Use of in lieu of services and value-based payments offer tools and strategies to PHPs for financing health-related services

- Investment requirements or rewards to PHPs to make some level of investment in community-based resources

- Regional Pilots to test, scale, strengthen and sustain evidence-based, public-private initiatives and more closely link the healthcare and social services systems

- Possible risk-adjustment or population stratification on social risk in future
Multi-layered Approach for Addressing Social Determinants of Health

• Medicaid Managed Care – 1115 Innovation Waiver

• Mapping of Social Determinants Indicators

• Standardized screening for unmet resource needs (housing, food security, transportation, interpersonal violence)

• Statewide Resource Database and social services integration

• Work force (e.g. Community Health Workers)

• Re-aligning or connecting existing resources where possible  
  – e.g. 2016 - 57,650 births for which Medicaid paid for prenatal care and delivery, 28.8% of women (17,000) did not have prenatal WIC.
Long Term Programmatic Vision:
• Preserve and strengthen the PMH, OBCM, and CC4C program models in a way that builds on the current models, introduces flexibility for new players to contribute to models and supports adjustments to the models that improve outcomes

Goals for Transition:
1. “Do no harm:” preserve access to practices and preserve the strengths of the current PMH, OBCM, and CC4C models that integrates social supports and is locally delivered
2. Place appropriate responsibilities and accountability on PHPs for high risk pregnancy care management and care management of children that meet today’s CC4C criteria
### Pregnancy Medical Home and OBCM

<table>
<thead>
<tr>
<th><strong>PMH and OB Current Recommendations</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Retain OB provider input into High Risk OB clinical treatment guidelines and quality metrics, through <strong>State-level clinical leadership dedicated to pregnancy services</strong></td>
</tr>
<tr>
<td>- Monitoring, quality improvement and convening roles by a statewide governance structure to guide pregnancy services, which will be led by the State, OB leadership, and will include PHPs</td>
</tr>
<tr>
<td>- State-level clinical governance model should review program outcomes and propose changes that build off of current program and improve outcomes</td>
</tr>
<tr>
<td>- Incorporate current PMH elements in contracting requirements (e.g. no elective deliveries prior to 39 weeks, etc.)</td>
</tr>
<tr>
<td>- Continue OB practice incentives through PHPs, within state guardrails</td>
</tr>
<tr>
<td>- Retain current rate increase for vaginal deliveries</td>
</tr>
<tr>
<td>- Require PHPs to offer incentives for OB practices for initial screenings and postpartum visits;</td>
</tr>
<tr>
<td>- Continue risk screening and Care Management</td>
</tr>
<tr>
<td>- Continue use of a modified version of the standardized screening form</td>
</tr>
<tr>
<td>- Allow OB practices to refer to care management via the standardized screening tool or other direct referral</td>
</tr>
<tr>
<td>- PHPs will be accountable for care management, but will continue to deliver via LHDs for at least 2 years</td>
</tr>
</tbody>
</table>
Ongoing work on Reproductive Life Planning

• Intended pregnancies = better birth outcomes

• Emphasis on increasing access to contraception, especially LARCs
  – LARC Reimbursement
  – Immediate postpartum LARC insertion
  – Provider education/training, including same-day access
  – Consumer education and support
  – Partnership with substance use treatment programs to promote access without coercion

• NC working on initiatives in collaboration with other states
  – Association of State and Territorial Health Officials (ASTHO) Increasing Access to Contraception
  – CDC 6|18 Initiative
Ongoing work on Reproductive Life Planning

• Rate methodology successfully changed for all Physicians Drug Program contraceptives (includes injectables, implants and IUDs)
  – Allows rate increases up to market (retroactive July 1, 2017)
  – Provides for future rate changes as costs change

• New DRGs for immediate postpartum (IPP) LARC created and effective October 1, 2017
Maternal Mortality Review Committee

• Committee Mission & Goals:
  − To identify potential preventable and contributing factors of maternal mortality across all levels of care, including patient/family, community, provider, facility, and system factors
  − To improve maternal health outcomes

• Limited reviews began in 1980s; legislation effective December 1, 2015 establishing the Committee

• Nine-member committee appointed for 2-year term (DHHS Secretary)

• Meets three times a year

• Review maternal death cases that occur up to one year after birth

• Discuss abstracted case and make decision as to how case is classified
Maternal Mortality

• NC pregnancy-related mortality ratio for 2014 (13.2 deaths per 100,000 live births) was lowest since 2006 and is below that estimated for the US.

• CDC Report from Nine Maternal Mortality Review Committees (NC included)
  – Nearly 50% of all pregnancy-related deaths were caused by hemorrhage, cardiovascular and coronary conditions, cardiomyopathy, or infection
  – Preeclampsia and eclampsia, and embolism were leading underlying causes of death among non-Hispanic black women
  – Mental health conditions were a leading underlying cause of death among non-Hispanic white women
  – Estimated that >60% of pregnancy-related deaths were preventable
  – Social and environmental factors may also contribute to woman’s risk of dying, as well as the health status of women before they become pregnant
Questions?
North Carolina Obstetrical and Gynecological Society and NC Section of ACOG

2018 ANNUAL MEETING

April 20-22, 2018 | Omni Grove Park Inn Resort | Asheville, NC

This continuing medical education activity is jointly provided by the American College of Obstetricians and Gynecologists.

Gregory F. Murphy, MD, FACS
North Carolina House of Representatives
I have nothing to disclose.

I have no relevant financial interest/arrangement or affiliation with any organizations related to commercial products or services to be discussed at this program.
Learning Objectives

- How Politics works...(how it *really* works)
- Why no one in their right mind would be in Politics...
- Why it is critical that someone in their right mind is in Politics...
- What those persons who are in their right mind did this past year in NC Politics for patients and those who care for patients
- How you as a physician and patient advocate can do to help influence legislation
Brief Overview of Politics
The Political Process

• **NC Bicameral Legislature**—Senate (50) and House of Representatives (120) with Gov as Executive Branch

• Many types of Individuals Represented (retirees, lawyers, businessmen, bail bondsmen, educators, one Nurse Practitioner and one Physician)–paid $13,900/year, $104 per diem

• Each w own district—elected/appointed by Gov

• Each serve 2 year terms

• 1\textsuperscript{st} year—”Long Session” / 2\textsuperscript{nd} Yr “Short session”

• Committee Assignments (Health (Chair), Health Appropriations (Chair), Ethics, Insurance, Appropriations, Education (Universities), Alcoholic Beverage Commission

• Typical Day 7am-8pm when in session...
How are laws made?

• Issue brought up by constituent, business group, society (NCMS), environmental group, state gov agency, anyone

• Bill drafted with assistance of Staff Attorneys and then submitted to the Speaker of the House

• Assignment of Bills…Very Important…
  • If viewed favorably by leadership, good assignment
  • If not viewed favorably, often sent to the Rules Committee where bills usually die
Committee Meetings
More doctors need to vote and get politically involved

How physicians are viewed

Physicians Vote less than $\frac{1}{3}$ of the time

Less than Attorneys, Farmers or the General Public
*In 1776, 11 percent of signers of the Declaration of Independence were physicians.

*In 1787 5 percent of the individuals crafting the US Constitution were physicians.

From 2013-2015 there were 21 physicians in U.S.Congress, 20 of whom were male and 17 were members of the Republican party.

From 2015-2017, there were 18 physicians in U.S. Congress. All were male and 15 were members of the Republican party. (38% Lawyers)

115th Congress (2017 – 2019)
From 2017-2019 there were 15 physicians in U.S. Congress, all were male and 13 were members of the Republican party. (3% Physicians)
How did I end up in Politics?

Davidson College Undergrad, PreMedicine/Religion

UNC School of Medicine, Urology/Transplant Residency @ UK

President of Eastern Urological Associates, Greenville NC
Division Chief of Urology, ECU School of Medicine/Vidant Medical Ctr

Chief of Staff Vidant Medical Center 2012-2015

Hobbies, Family, Church, Medical Missions

BUT…While some of these experiences/positions have political implications, NOT ONE of them prepared me for POLITICS...
If you're not at the table, you're on the menu

— Michael Enzi —
Sometimes you just have to hold your nose and jump into something.

Mary Carillo
CAMPAIGNING

Raising Money....

Knocking Doors...not easy...

Away from Practice and Family...
The Work begins:

Still practice full time

*See patients/OR from 7a-2p Monday
*Raleigh Monday night til Thursday at 2pm
*Thursday Evening clinic, All day Friday, Saturday Am Clinics
Average Day in the General Assembly
.....Very busy.....

Committee Meetings/Caucus

Constituents

Session

Lobbyists
Rules...lots of them....Political Life MUCH different than Medical Life

- Campaign Contributions
- Campaign Expenditures
- Personal Involvements
  - Financial
  - Relationships
Good Things I get to do
**Representative Gregory F. Murphy, MD (Rep)**

**Introduced Bills, 2017-2018 Session**

<table>
<thead>
<tr>
<th>Bill</th>
<th>Short Title</th>
<th>Action Date</th>
<th>Action Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H116</td>
<td>Student Safety in Athletics.</td>
<td>02/22/2017</td>
<td>Re-ref Com On Education - K-12</td>
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<tr>
<td>H1140</td>
<td>Dental Plans Provider</td>
<td>08/25/2017</td>
<td>Placed On Call For 08/29/2017</td>
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<tr>
<td>H141</td>
<td>Maintenance Bond for Subdivision Roads.</td>
<td>02/22/2017</td>
<td>Ref to the Com on State and Local Government B, if favorable, Transportation</td>
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<tr>
<td>H140</td>
<td>Student W Dyslexics and Dyscalculia</td>
<td>07/20/2017</td>
<td>Ch. Sl. 2017-127</td>
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<tr>
<td>H180</td>
<td>Standards for Chiropractic Peer Reviews.</td>
<td>04/06/2017</td>
<td>Ref To Com On Rules and Operations of the Senate</td>
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<tr>
<td>H196</td>
<td>Medicaid PHP/License/Food Stamps State Board.</td>
<td>06/29/2017</td>
<td>Ref Com On Rules, Calendar, and Operations of the House</td>
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<tr>
<td>H194</td>
<td>Check Off Donation: Cancer Screening.</td>
<td>03/29/2017</td>
<td>Ref To Com On Rules and Operations of the Senate</td>
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<tr>
<td>H170</td>
<td>Pilot/Spots for Students With Disabilities.</td>
<td>02/23/2017</td>
<td>Ref To Com On Appropriations</td>
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<tr>
<td>H186</td>
<td>Repeal HB2/State Nondiscrimination Policies.</td>
<td>02/07/2017</td>
<td>Ref To Com On Rules, Calendar, and Operations of the House</td>
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<tr>
<td>H199</td>
<td>Establish Standards for Surgical Technology.</td>
<td>03/14/2017</td>
<td>Ref To Com On Rules and Operations of the Senate</td>
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<tr>
<td>H286</td>
<td>Occup. Therapy/Choice of Provider.</td>
<td>06/21/2017</td>
<td>Ch. SL 2017-24</td>
</tr>
<tr>
<td>H244</td>
<td>Strengthen Opioid Misuse Prevention (STOP) Act.</td>
<td>06/22/2017</td>
<td>Ch. Sl. 2017-17</td>
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<tr>
<td>H256</td>
<td>Body Art Regulation Changes</td>
<td>04/27/2017</td>
<td>Ref To Com On Rules and Operations of the Senate</td>
</tr>
<tr>
<td>H286</td>
<td>Terminating Agreement of Tailing of 177.</td>
<td>03/08/2017</td>
<td>Ref To Com On Rules, Calendar, and Operations of the House</td>
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<tr>
<td>H278</td>
<td>The Haley Hayes Newborn Screening Act.</td>
<td>06/22/2017</td>
<td>Serial Referral To Appropriations Stacked</td>
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<tr>
<td>H276</td>
<td>Strengthen Youth Tobacco Use Prevention Fund.</td>
<td>03/06/2017</td>
<td>Ref to the Com on Health, if favorable, Appropriations</td>
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<tr>
<td>H277</td>
<td>Naturopathic Study.</td>
<td>06/22/2017</td>
<td>Ref-com On Rules and Operations of the Senate</td>
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<tr>
<td>H279</td>
<td>Fantasy Sports Regulation.</td>
<td>06/07/2017</td>
<td>Ref Com On Judiciary IV</td>
</tr>
<tr>
<td>H280</td>
<td>Juvenile Justice Reimbursement Act.</td>
<td>09/10/2017</td>
<td>Ref To Com On Rules and Operations of the Senate</td>
</tr>
<tr>
<td>H283</td>
<td>DHHS Recommend Telemedicine Policy.</td>
<td>07/20/2017</td>
<td>Ch. Sl. 2017-133</td>
</tr>
</tbody>
</table>
Legislative Successes

Malpractice Lawyer
SERVING Winston-Salem, NC

Don’t be a victim.
Get the help you deserve.

Helios Legal Group
Caps on noneconomic damage
SB 33 caps compensation for noneconomic damages at $500,000. “Noneconomic damages” refers to compensation for pain, suffering, personal loss, professional loss or anything else that cannot be defined monetarily.

Immunity for emergency personnel
In addition to the cap, SB 33 gave extra protection to emergency personnel by putting tougher standards to prove medical malpractice in an emergency situation. Plaintiffs must prove “gross negligence” when pursuing a malpractice case classified as an emergency.
Almost didn’t happen:
Although passed in Senate and then in House
BUT—Vetoed by Governor Bev Perdue

NCMS and other Stakeholders went into action
urging physicians to visit their legislators and
made their voices heard one on one

Veto Overridden!!! 74-42

Physician Advocacy Works!!!!!
How did we get here?
Overdoses now leading cause of death of Americans under 50

One person dies every 19 MINUTES from drug overdose in the United States and this increasing trend is driven by Rx painkillers.

Opioid pain relievers are responsible for more overdose deaths than cocaine and heroin combined.

Share this to help #EndMedicineAbuse.

Published by The Partnership at Drugfree.org. Visit MedicineAbuseProject.org for more details.
In 2016, drug overdoses likely killed more Americans than the entire wars in Vietnam and Iraq.
Life expectancy has improved in the US, but a 2015 dip shows that might be changing

The last major decline was in 1993, when life expectancy fell by 0.3 years

Life expectancy fell from 78.9 to 78.8 years in 2015

Source: National Vital Statistics System
Credit: Sarah Frostenson
"STOP" ACT

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2017

H

HOUSE BILL DRH20012-MGfa-35H* (01/26)

H.B. 243
Mar 2, 2017
HOUSE PRINCIPAL CLERK

Short Title: Strengthen Opioid Misuse Prevention (STOP) Act.

Sponsors: Representatives Murphy, Davis, Malone, and Horn (Primary Sponsors).

Referred to:
Murphy takes lead on opioid legislation

Ginger Livingston
Friday, March 3, 2017

Legislation that limits the number of painkillers doctors can prescribe and strengthens reporting requirements will help stem an epidemic of opioid abuse in North Carolina, the bill's chief sponsor, state Rep. Greg Murphy of Greenville, said.

Murphy was among lawmakers who introduced and promoted the Strengthen Opioid Misuse Prevention Act — known as the STOP Act — during a news conference at the state capitol on Thursday. The proposal includes provisions addressing prescribing and dispensing medication. It also includes $20 million for treatment and recovery programs over two years.

Murphy, R-Pitt, is the lead sponsor of the House bill; a companion bill was introduced in the Senate. By 2:30 p.m. Thursday 34 other
‘STOP ACT’ SUMMARY

- Initial prescription limits for ACUTE PAIN
- CSRS Queries with each prescription
- E-scribing of Opioids
- Closer consultation with NP’s/PA’s/MD’s at Pain Clinics
- Better defined disposal of Prescribed Opioids (Hospice)
- Standing Order for Naloxone
- Pharmacy Reporting with CSRS and regulations
- Mandatory yearly review of CSRS
- $10M State/$20M Fed monies for Community Based Treatment
NC House Bill 243 “STOP ACT” *Initial Draft*

**Written by Attorney General and his staff---Very Unfavorable to Doctors**

Initial restriction of 3 day script for Opioids
*Would have been exceedingly bothersome for MD’s
*Subsequently changed to 5 day restriction for Acute Pain
*Post Op pain to 7 days

Required Queries of Controlled Substance Reporting System (CSRS) with each Narcotic prescription to check patients history
*Must document in EHR
*Had to explain what limitations EHR’s have
*Allow paper script to be used at times

Attorney General wanted to fine MD’s $250 for each instance  *CSRS not queried
*Changed language to reporting to NCMB—no fine

Initially a yearly fee of $50 per doc to keep CSRS going
*Negotiated that down to $0
Politics the way it is *supposed* to work...

First step in many ahead to combat the Opioid Crisis...
Playing Defense...
Bill to allow Optometrists to perform Laser Surgery in their Offices

Optometrists hired $750K worth of Lobbyists

Would have had profound implications if passed

As a Chair able to get it blocked completely and turned into a ‘study bill’, then died in Senate....
Scope of Practice Issues

HB 88

HB 88 seeks to allow NP’s, CRNA’s and Midwives to practice without supervision.

Would fundamentally change the way Health Care is delivered in NC
Pharmacists are practicing medicine now

Posted by eeisman on August 24, 2017 - 09:14AM EDT
Author Specialties: Internal Medicine and Cardiology

My partner got a call from a pharmacist that a patient of hers should be taking a statin. Of course she flew off the handle and told the pharmacist that she know nothing about her patient, has not examined the patient, the patient has refused to take a statin, and we should not get stupid calls from the drugstore. The drugist said that she was a DOCTOR of pharmacy and will report her to the authorities.
Future Legislative Issues for North Carolina
MEDICAID EXPANSION
in NORTH CAROLINA
North Carolina has **NOT** accepted federal Medicaid expansion

2,037,941

Number of people covered by Medicaid as of March 2017

379,000

Number of additional people who would be covered if the state accepted expansion

219,000

Number of people who have **NO** realistic access to health insurance without Medicaid expansion

$39.6 billion

Money the state is leaving on the table from 2013 to 2022 by not expanding Medicaid
GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2017

HOUSE BILL 662

Short Title: Carolina Cares.  

Sponsors: Representatives Lambeth, Murphy, Dobson, and White (Primary Sponsors).  
For a complete list of sponsors, refer to the North Carolina General Assembly web site.

Referred to: Health Care Reform

April 11, 2017

A BILL TO BE ENTITLED

AN ACT TO PROVIDE HEALTH COVERAGE TO RESIDENTS OF NORTH CAROLINA UNDER THE CAROLINA CARES PROGRAM.

The General Assembly of North Carolina enacts:

SECTION 1. Carolina Cares. – It is the intent of the General Assembly to facilitate
Key Components
- Alternative to Medicaid Expansion
- Health Insurance for the State’s Working Poor
- Participant’s required to do health maintenance activities AND a Work Requirement
- Paid for by Fed return of monies to state and tax on Hospitals (2:1 return)
- Participant Contributions
  - 2% of household’s income
Physician Groups Representing 426,000 Doctors: Gun Violence MUST STOP

DOCS vs GLOCKS
North Carolina

**HB 728**

August 2016, the North Carolina state legislature passed HB 728, which, among other provisions, states that the North Carolina Medical Board “shall not deny a licensee’s annual registration based solely on the licensee’s failure to become board certified.”
Certificate of Need Laws

Repealing N.C. CON laws would cut costs, boost access, study says

Peer-reviewed report by Mercatus Center concludes CON repeal also would reduce mortality rates
What does the future of Medicine look like?
Get to know your Legislator...
• Be Respectful---of their position, their time
• Know your issue---be prepared for Questions
• Introduce yourself and your issue
• Know your opposition
• **Succinct literature**
• Do not be argumentative or try to back them into a corner
• Do not interrupt, take notes or be arrogant
• Be kind to their staff....