Keeping you and your baby healthy and safe during COVID-19
FYC Action Team #4
Reduce Extreme Premature Births & Racial Disparities

2018 Findings & Recommendations: Aggregate Data

Presenters: Rita Horwitz RN, Brian Mercer MD
( Co-Leads, AT#4)

First Year Cleveland
Community Action Team Meeting
Action Team #4 Goals

• Prevent/delay extreme premature births. Optimize outcomes of peri-viable births
• Collect data and launch learning circles with local birth hospitals and researchers/experts
• Launch QI interventions, monitor progress, identify and spread best practices
Causes of Infant Death
Cuyahoga County, 2013-2017

Work to Date & Future Work

- **Action Team #4 Formation**
- **Aggregate baseline data (2013-2017 all four systems)**
- **Learning Circles & define consensus-driven data elements**
- **Gather and analyze/report patient data (2018-2019 all four systems)**
- **QI interventions, ongoing evaluation; Integrate QI with AT#1**

- **May – August 2018**
- **Sept – Dec 2018**
- **Jan – Dec 2019**
- **Jan - Dec 2020**
2013-2017 Aggregate Baseline Data
Infant Mortalities Related to Prematurity by Gestational Week
Cuyahoga County, 2017

Overall total deaths=82
90% <26 weeks

Source: Cuyahoga County Board of Health
Proportion of Live Birth That Are Extremely Premature
(< 26 weeks)
All Live Births, 2013-2017

• Extreme premature births are a problem for every hospital system in Cuyahoga County.

Among participating systems, extreme prematurity rate ranges from a low of 0.5% to a high of 1.5%.
Cumulative Newborn Death before discharge by Week (%)
Survival according to Delivery Gestation (%)

% of Live Births Which Survived to Discharge
(All Systems combined, 2013-2017)
by Gestational Week

Gestational Week

Survival according to Delivery Gestation (%)

Gestational Week
Action Team 2018 Findings
Prioritized Areas for Data Collection and Evaluation

Access to Early Care, Risk Identification and Follow-up
1: Early identification of risk for extremely preterm birth
2: Timely antenatal consultation for those at risk
3: Appropriate follow-up after ED evaluation

Access to Timely Consultation and Intervention
4: Timely access to Progesterone
5: Timely access to history and ultrasound indicated cerclage
6: Collaborative consultative care for twin/multifetal gestation

Coordinated Counseling and Care Planning at Admission
7: Systemwide guidelines regarding counseling and care for anticipated extremely preterm birth

Appropriate Access to Critical Newborn Interventions and Comfort Care
8: Coordinated care for imminent extremely preterm birth
9: Evaluation of appropriateness of resuscitation absent parental request for comfort care
## Mother’s Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Black - African American</th>
<th>White</th>
<th>Other-Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>81 (48%)</td>
<td>66 (39%)</td>
<td>23 (14%)</td>
<td>170</td>
</tr>
<tr>
<td>Nulliparous</td>
<td>22%</td>
<td>32%</td>
<td>26%</td>
<td>27%</td>
</tr>
<tr>
<td>Teen (&lt;20 years old)</td>
<td>4%</td>
<td>12%</td>
<td>0%</td>
<td>7%</td>
</tr>
<tr>
<td>Advanced Maternal Age (35+)</td>
<td>10%</td>
<td>21%</td>
<td>39%</td>
<td>18%</td>
</tr>
<tr>
<td>High School Graduate</td>
<td>80%</td>
<td>93%</td>
<td>94%</td>
<td>87%</td>
</tr>
<tr>
<td>Living with Partner</td>
<td>60%</td>
<td>85%</td>
<td>74%</td>
<td>73%</td>
</tr>
<tr>
<td>Other (non-partner) adults in home</td>
<td>12%</td>
<td>9%</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td>Frequent Address Change</td>
<td>3%</td>
<td>2%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Shelter / Homeless</td>
<td>1%</td>
<td>2%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Tobacco use</td>
<td>15%</td>
<td>15%</td>
<td>13%</td>
<td>15%</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>4%</td>
<td>2%</td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td>Illicit drug use</td>
<td>7%</td>
<td>6%</td>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td>Underweight</td>
<td>0%</td>
<td>2%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Obese</td>
<td>60%</td>
<td>38%</td>
<td>44%</td>
<td>49%</td>
</tr>
</tbody>
</table>
## Mother’s Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Black - African American</th>
<th>White</th>
<th>Other-Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>81 (48%)</td>
<td>66 (39%)</td>
<td>23 (14%)</td>
<td>170</td>
</tr>
<tr>
<td><strong>Infertility Rx</strong></td>
<td>1%</td>
<td>14%</td>
<td>13%</td>
<td>8%</td>
</tr>
<tr>
<td><strong>Surrogate</strong></td>
<td>0%</td>
<td>2%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Multiple Gestation</strong></td>
<td>6%</td>
<td>15%</td>
<td>17%</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Prior Uterine Surgery (incl. D&amp;C)</strong></td>
<td>11%</td>
<td>9%</td>
<td>4%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Prior Cervical Surgery</strong></td>
<td>10%</td>
<td>2%</td>
<td>9%</td>
<td>7%</td>
</tr>
</tbody>
</table>
Prior Obstetric History
N=170

<table>
<thead>
<tr>
<th>Prior Event</th>
<th>Black - African American</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>No prior pregnancy</td>
<td>20%</td>
<td>33%</td>
</tr>
<tr>
<td>Prior preterm birth</td>
<td>40%</td>
<td>19%</td>
</tr>
<tr>
<td>Prior miscarriage/abortion (&lt;20 weeks) only</td>
<td>15%</td>
<td>20%</td>
</tr>
<tr>
<td>Prior term birth(s) only</td>
<td>25%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Prior Term Birth(s) only: 28%
Prior Miscarriage/Abortion (<20 weeks) only: 18%
Prior Preterm Birth: 27%
No prior pregnancy: 27%
Prenatal Care Events
N=170

Access to Care

- First trimester care, but no first trimester Ultrasound: 11%
- First trimester ultrasound or ED visit but no first trimester care: 9%
- Received ultrasound or ED visit prior to 22 weeks but no documented prenatal care: 3%

Delayed Prenatal Care, Ultrasound for Cervical Length; Care Coordination Opportunity after ED Visit
Prenatal Care Events
N=170

Access to Cervical Length Assessment

- 53 mothers had no cervical length measurement and preterm labor was due to short cervix with no preventive intervention.
- 11 mothers had ultrasound prior to 23 weeks with no prenatal care visit or cervical length measurement.

31% had no cervical length measurement and preterm labor was due to short cervix with no preventive intervention.
Cervical Length Screening (Prior to 23 Weeks)

Access to Cervical Length Assessment

<table>
<thead>
<tr>
<th>Race</th>
<th>Number of Mothers</th>
<th>Cervical length measured before admission</th>
</tr>
</thead>
<tbody>
<tr>
<td>All mothers</td>
<td>141</td>
<td>77</td>
</tr>
<tr>
<td>African-American</td>
<td>66</td>
<td>43</td>
</tr>
<tr>
<td>White</td>
<td>53</td>
<td>20</td>
</tr>
<tr>
<td>Other/Unknown Race</td>
<td>22</td>
<td>14</td>
</tr>
</tbody>
</table>
Prior Preterm Birth

17OH-Progesterone for Prior Spontaneous Premature Births

- **All Mothers**: 26 mothers had prior spontaneous premature birth, with 16 of them offered 17OHP.
- **African-American**: 17 mothers had prior spontaneous premature birth, with 11 of them offered 17OHP.
- **White**: 7 mothers had prior spontaneous premature birth, with 4 of them offered 17OHP.
- **Other/Unknown Race**: 2 mothers had prior spontaneous premature birth, with 1 of them offered 17OHP.
Cervical Insufficiency

(Diagnosed Prior to 23 Weeks)

- All Mothers: 29
- African-American: 17
- White: 8
- Other/Unknown Race: 4

Cervical unsufficiency diagnosed
Short Cervix

Vaginal Progesterone for Cervix (< 20 mm)

- All Mothers: 18 (11 offered) - Short Cervix, No Prior Spontaneous Preterm Births
- African-American: 14 (9 offered)
- White: 3 (2 offered)
- Other/Unknown Race: 1 (0 offered)
Multiple Gestations

<table>
<thead>
<tr>
<th></th>
<th>Twins/Multiples Diagnosed</th>
<th>MFM Consultation</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Mothers</td>
<td>19</td>
<td>12</td>
</tr>
<tr>
<td>African-American</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>White</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Other/Unknown Race</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

Number of Mothers
Hospital Care

**Intrapartum Interventions for Fetal Benefit**
(Mothers with Documented Intent to Intervene, Delivery >1 hour After Admission)

- Antenatal corticosteroids
- Continuous Electronic Fetal Monitoring
- Magnesium Sulphate
- Tocolysis
- Caesarean Delivery

% of Mothers

- All Mothers
- African American
- White
- Other/Unknown Race
NICU Staff Involvement and Care

Intent to Intervene For Fetal Benefit and Intent to Resuscitate

Intent to intervene for fetal benefit
- All Mothers: 58%
- African American: 58%
- White: 56%
- Other/Unknown Race: 60%

Intent to resuscitate at birth
- All Mothers: 69%
- African American: 61%
- White: 79%
- Other/Unknown Race: 80%
NICU Staff Involvement and Care

Newborn Outcomes

- Liveborn:
  - All Newborns: 69%
  - African American: 77%
  - White: 61%
  - Other/Unknown Race: 65%

- Comfort care provided:
  - All Newborns: 19%
  - African American: 23%
  - White: 15%
  - Other/Unknown Race: 17%

- Newborn survived to discharge:
  - All Newborns: 42%
  - African American: 48%
  - White: 33%
  - Other/Unknown Race: 48%
Extreme Premature Births per 100 Live Births, Cuyahoga County 2018

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cuyahoga</td>
<td>149</td>
<td>13843</td>
<td>1.07</td>
</tr>
<tr>
<td>Cleveland</td>
<td>109</td>
<td>8956</td>
<td>1.22</td>
</tr>
<tr>
<td>OEI Targets</td>
<td>21</td>
<td>1417</td>
<td>1.48</td>
</tr>
</tbody>
</table>

Extreme PTB occurred in 43 out of 52 zip codes; It’s everyone's problem

OEI=Ohio Equity Institute
## Extreme Premature Babies

**divided by Birth Certificate Births in 2018 for Moms who were residents of zip codes in Cuyahoga County**

<table>
<thead>
<tr>
<th>Social/Economic Determinants</th>
<th>High Ratio [1.50, 2.73]</th>
<th>Low Ratio [0.01, 1.50]</th>
<th>None (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td># of zip codes</td>
<td>16</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>% Non-Hispanic White</td>
<td>53.4</td>
<td>57.6</td>
<td>75.4</td>
</tr>
<tr>
<td>% African-Amer. or Black</td>
<td>35.8</td>
<td>35.1</td>
<td>14.1</td>
</tr>
<tr>
<td>% Hispanic ethnicity</td>
<td>5.5</td>
<td>3.5</td>
<td>3.4</td>
</tr>
<tr>
<td>Area Deprivation Index</td>
<td>106.8</td>
<td>102.1</td>
<td>86.6</td>
</tr>
<tr>
<td>Median Income</td>
<td>47,500</td>
<td>50,300</td>
<td>65,200</td>
</tr>
<tr>
<td>HS Graduation Rate</td>
<td>84.1</td>
<td>87.5</td>
<td>87.0</td>
</tr>
<tr>
<td>% Single-Parent HHs</td>
<td>39.7</td>
<td>39.3</td>
<td>23.1</td>
</tr>
<tr>
<td>% Broadband</td>
<td>69.9</td>
<td>73.7</td>
<td>77.1</td>
</tr>
<tr>
<td>% Smart Phone</td>
<td>64.5</td>
<td>66.4</td>
<td>69.7</td>
</tr>
<tr>
<td>Death Rate</td>
<td>12.8</td>
<td>11.7</td>
<td>9.4</td>
</tr>
<tr>
<td>Maltreatment Rate</td>
<td>20.9</td>
<td>13.1</td>
<td>8.9</td>
</tr>
</tbody>
</table>
Prioritized Recommended QI Interventions: 2020

Based on chart review data collection, AT #4 prioritized 3 quality improvement interventions:

1. Early access to prenatal care for pregnant women presenting to an ED for evaluation

2. Early establishment of gestational age, pregnancy viability, and determination of pregnancy risk

3. Consistent cervical length screening in all pregnancies receiving prenatal care before 20 weeks
2020 Quality Improvement Activities
2020 QI Efforts – Clinical System

• Disseminated chart review findings at Cleveland Society of OB (Jan) and Grand Rounds at health systems (Jan-Feb)

• Health systems shared current processes related to 3 intervention areas in Learning Circles

• Developed key driver diagram for each intervention priority

• Journey mapping and fishbone diagram of current processes and pain points
Pregnancy information is captured. If ≥18 weeks patient is sent to OB. Consult may occur <18 weeks. Pregnancy-related issues included in diagnosis & treatment. Follow-up appointment is made by patient. MH assures support for patient.
Obstacles to Timely Prenatal Care

- **Support System**: Wrong information (when to seek care), OB doesn’t ask about PNC, Wait is too long, Lack of resources
- **Transit**: Patient comes into ED with insufficient resources
- **Registration**: Woman does not know she’s pregnant, PNC information is incorrect
- **ED Doc**: Visit isn’t seen as pregnancy-related, Too early in pregnancy
- **Scheduling**: Can’t schedule certain patients easily, Only has ability if specifically asked by Doc, Lack of training
- **Follow-Up**: Patient is asked to call number, Nothing is done to aggregate discharge notes

Lack of resources
COVID-19 Pandemic
March 2020 - Present

Access to Care

In-Home / Group Interventions

TeleHealth
QI Integration – Action Team 4 & Action Team 1
Integrated Action Team#1 and #4 QI Efforts

• **Collaborate with Action Team #1**: Overlay the patient lens; integrate journey mapping of patient prenatal care and birth experience with health care system process mapping to achieve better outcomes, reduce disparities

• **Plan and implement integrated QI interventions**

• **Evaluate effects of COVID-19 on care and birth outcomes** *(as feasible)*
  - Virtual prenatal care visits; effectiveness of home monitoring – bp, weight, etc..
  - Birth experience; home births? With and without support/coaches/ Doulas
  - Post partum – follow up adherence?
  - Access to care / transportation– no show rate changes?
  - Racial disparities impact
Questions?