Improving Perinatal Quality with CMQCC

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Program Manager
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CPQCC and CMQCC

Mission: Improving care for moms and newborns

California Perinatal Quality Care Collaborative (CPQCC)
- Established Perinatal Data Center in 1996: Now 132 NICUs
- Focus on high-risk newborns

California Maternal Quality Care Collaborative (CMQCC)
- Statewide collaborative composed of providers, payers, purchasers, public health agencies and consumer groups
- Expertise in maternal quality of care
- Now 170+ CA hospital members: 75% of CA Delivery Volume
- Also 50 + hospitals from Oregon and Washington participate in the CMQCC Maternal Data Center
Example of CMQCC Approach to Maternal Quality Improvement:

Supporting Vaginal Birth and Reducing Primary Cesareans
Identify the Quality Issue:

*Cesarean Births Have Risen by Over 50% in the Last 15 years*

US 2013 = 32.7%
CA 2013 = 33.1%
Variation of Total Cesarean Rate Among 251 California Hospitals: 2013
(Source: Linked OSHPD-Birth Certificate Data)

Range: 15.0—71.4%
Median: 32.5%
Mean: 32.8%

“But, our patients are higher risk than other hospitals!”
NTSV CS Rate Among CA Hospitals: 2014
(Nulliparous Term Singleton Vertex)
(Source: Linked OSHPD-Birth Certificate Data)

Range: 12%—70%
Median: 25.3%
Mean: 26.2%

National Target = 23.9%

40% of CA hospitals meet national target
Large Variation = Improvement Opportunity
Pilot to Demonstrate Feasibility

*Reducing Unnecessary Cesarean Births*

Three pilot hospitals partnered with CMQCC to safely reduce unnecessary cesareans—with focus on first births among low-risk women—and achieved dramatic results:
Evidence-Based Toolkit

- Comprehensive, evidence-based “How-to Guide” to reduce primary cesarean delivery in the NTSV population
- Over 50 Expert writers and editors representing
  - Doctors (OBs & Anesthesiologists)
  - Midwives
  - Nurses
  - Childbirth Educators
  - Doulas
  - Public Health Experts and Policy Makers
  - Health Care Purchasers
  - Risk Management and Health Care Safety Experts
  - Hospital administrators
Coordinate CMQCC QI Collaborative

- Two rounds of participation
  - First round started in May 2016
  - Second round kicks off November 2016

- Use the Mentor Model for collaborative work

- 65 hospitals in each round
  - Special targeting for higher rate/higher volume
# Maternal Data Center

*Confidential Tool for Each Hospital*

## Demo Hospital

### Measures

#### Hospital Clinical Performance Measures

- **Elective Delivery (PC-01)**: 16.1%
- **Low-Risk Cesarean Section Rate - NTSV (PC-02)**: 32.0%
- **Vaginal Birth After Cesarean (VBAC) Rate, Uncomplicated (AHRQ IQR 22)**: 11.5%
- **Total Cesarean Section**: 35.0%
- **Primary Cesarean Section**: 22.6%
- **Failed Induction**: 16.2%

View all 31 Hospital Clinical Performance Measures

#### Provider Performance Measures

- **Cesarean Births**
- **Elective Deliveries**
- **Vaginal Births**

#### Hospital Data Quality Measures

- **Missing / Inconsistent Delivery Method**: 0.8%
- **Missing / Inconsistent V27 (Outcome of Delivery)**: 0.0%
- **Data Submission Trends**
- **Correction Reports**

View all 15 Hospital Data Quality Measures

### Period: Q1 2015

#### CPMS/PSF Hemorrhage Safety Initiatives

- **Massive transfusions (≥ 4 RBC units) per 1000 mothers**: 2
- **Total RBC/FFP blood products transfused per 1000 mothers**: 28
- **Severe Maternal Morbidity with Obstetric Hemorrhage**
  - **Hemorrhage Case Debriefs**: 10*
  - **Hemorrhage Safety Bundle**: 44.4%*

View all 7 CPMS/PSF Hemorrhage Safety Initiatives

#### CPMS Preeclampsia Safety Initiatives

- **Severe Maternal Morbidity with Preeclampsia**: 0.0%
- **Preeclampsia Timely Treatment**: 66.7%
- **Preeclampsia Case Debriefs**: 3*
- **Preeclampsia Safety Bundle**: 0.0%*

### Hospital Statistics

- **Demographic Statistics**
- **Delivery Statistics**
- **Maternal Comorbidity Statistics**
- **Baby/Prematurity Statistics**
- **Utilization Statistics**
- **CCS Report**
<table>
<thead>
<tr>
<th>Measure</th>
<th>Q1 2014 Rate</th>
<th>Mar 2014 Rate</th>
<th>Jul 2012 - Jun 2013 Statewide</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd &amp; 4th Degree Lacerations in Instrument-Assisted Vaginal Deliveries</td>
<td>2.4%</td>
<td>0.0%</td>
<td>13.4%</td>
</tr>
<tr>
<td>3rd &amp; 4th Degree Lacerations in NON-Instrument-Assisted Vaginal Deliveries</td>
<td>0.3%</td>
<td>1.0%</td>
<td>2.4%</td>
</tr>
<tr>
<td>3rd &amp; 4th Degree Lacerations in Vaginal Deliveries</td>
<td>0.6%</td>
<td>0.9%</td>
<td>3.4%</td>
</tr>
<tr>
<td>5 Minute APGAR &lt;7 Among All Deliveries &gt;39 weeks (HEN)</td>
<td>0.5%</td>
<td>0.0%</td>
<td>0.4%</td>
</tr>
<tr>
<td>5 Minute APGAR &lt;7 in Early Term Newborns (HEN)</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Antenatal Steroids (PC-03)</td>
<td>80.0%</td>
<td>0.0%</td>
<td>N/A</td>
</tr>
<tr>
<td>Appropriate DVT Prophylaxis in Women Undergoing CS</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Birth Trauma - Injury to Neonate (AHQR PSI 17)</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Cesarean Section Rate-Nullip, Term, Singleton, Vertex (PC-02)</td>
<td>34.5%*</td>
<td>30.6%*</td>
<td>28.5%</td>
</tr>
<tr>
<td>Cesarean Section Rate-Nullip, Term, Singleton, Vertex: Age Adjusted (PC-02)</td>
<td>26.7%*</td>
<td>26.9%*</td>
<td>25.9%</td>
</tr>
<tr>
<td>Cesarean Section Rate-Term, Singleton, Vertex (AHQR IQI 21)</td>
<td>33.3%</td>
<td>32.5%</td>
<td>29.7%</td>
</tr>
<tr>
<td>Elective Delivery &lt;39 Weeks (PC-01)</td>
<td>4.4%</td>
<td>5.6%</td>
<td>N/A</td>
</tr>
<tr>
<td>Episiotomy Rate</td>
<td>9.3%*</td>
<td>3.5%*</td>
<td>9.4%</td>
</tr>
<tr>
<td>Exclusive Breastfeeding (PC-05)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Exclusive Breastfeeding with Mother’s Choice (PC-05a)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Failed Induction</td>
<td>13.7%</td>
<td>7.9%</td>
<td>23.0%</td>
</tr>
<tr>
<td>Induction Rate</td>
<td>17.7%</td>
<td>21.0%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Newborn Bilirubin Screening Prior to Discharge</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>OB Hemorrhage Risk Assessment on Admission</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Operative Vaginal Delivery</td>
<td>7.6%</td>
<td>5.5%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Preeclampsia ICU Admissions</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Preeclampsia Total ICU Days</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Hospital Performance Over Time

For each hospital quality measure:

- View reports on monthly/quarterly/annual basis
- Easy downloads of the graphics or numerical data
Drill Down Information

- Drill down to case-level information within own hospital account
- Hover boxes show definitions for ICD-9 codes

<table>
<thead>
<tr>
<th>Account Number</th>
<th>Delivery Date</th>
<th>Diagnoses</th>
<th>Birth Weight</th>
<th>Gestational Age</th>
<th>Induced</th>
<th>Provider ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1764eb84d7</td>
<td>12/30/2014</td>
<td>661.11, 285.9, 660.71, 648.21, V27.0</td>
<td>3367</td>
<td>40</td>
<td>No</td>
<td>A10040</td>
</tr>
<tr>
<td>4860e5d3e9</td>
<td>01/03/2015</td>
<td>647.61, 534.10, V27.0</td>
<td>3596</td>
<td>38</td>
<td>No</td>
<td>A10019</td>
</tr>
<tr>
<td>58bb4d6b5e</td>
<td>01/08/2015</td>
<td>641, 653.51, 663.31, V27.0</td>
<td>4109</td>
<td>40+4</td>
<td>No</td>
<td>A10019</td>
</tr>
</tbody>
</table>
State, Regional, Nursery-Level Comparisons

*Benchmark your hospital against other peer comparison groups*

**C-Section Rate: Low Risk-NTSV (PC-02)**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Start Date</th>
<th>Duration</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Trend</td>
<td>10/01/2014</td>
<td>6 Months</td>
<td>MDC</td>
</tr>
<tr>
<td>Definition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measure Analysis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparisons</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Peer**

- NICU Level
- By Payer
- By Provider
- By Practice Group

**Graph: C-Section Rate**

- Demo Hospital: 31.4%
- Alameda County (6): 23.7%
- North Coast East Bay Region (15): 24%
- CA MDC (117): 25%

*C-Section Rate: Low Risk–NTSV (PC-02)*
System-Wide Comparisons

If part of a multi-hospital system, can view all hospital rates within the system

Cesarean Section Rate-Nullip, Term, Singleton, Vertex (PC-02)

Cesareans among live births that are: 1) singleton; 2) vertex; 3) lacking "early onset delivery" ICD-9 code; 4) >=37 weeks GA; 5) to nulliparous women.

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Springfield General</td>
<td>34.5%</td>
</tr>
<tr>
<td>Mayburry Medical Ctr</td>
<td>26.4%</td>
</tr>
<tr>
<td>Twin Peaks Hospital</td>
<td>22.1%</td>
</tr>
<tr>
<td>Hollywood Health Systemwide</td>
<td>28.9%</td>
</tr>
<tr>
<td>California Statewide (Jul 2012 - Jun 2013)</td>
<td>28.5%</td>
</tr>
</tbody>
</table>

Low-Risk First-Birth (NTSV) C/S Rate
Provider-Level Cesarean Rates

Screen Shot from the CMQCC Maternal Data Center

<table>
<thead>
<tr>
<th>Hospital Name</th>
<th>Count</th>
<th>Rate</th>
<th>Count</th>
<th>Rate</th>
<th>Count</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Medical Center</td>
<td>5844</td>
<td>32.2%</td>
<td>2369</td>
<td>37.9%</td>
<td>5844</td>
<td></td>
</tr>
<tr>
<td>G5xxxx</td>
<td>52</td>
<td>13.6%</td>
<td>22</td>
<td>9.6%</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>G6xxxx</td>
<td>47</td>
<td>36.8%</td>
<td>19</td>
<td>40.4%</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>G7xxxx</td>
<td>68</td>
<td>20.8%</td>
<td>24</td>
<td>42.6%</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>G8xxxx</td>
<td>60</td>
<td>15.4%</td>
<td>26</td>
<td>21.7%</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>A8xxxx</td>
<td>190</td>
<td>42.7%</td>
<td>75</td>
<td>44.7%</td>
<td>190</td>
<td></td>
</tr>
<tr>
<td>A6xxxx</td>
<td>52</td>
<td>35.0%</td>
<td>20</td>
<td>42.3%</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>A5xxxx</td>
<td>2</td>
<td>No Cases</td>
<td>0</td>
<td>100.0%</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>A4xxxx</td>
<td>114</td>
<td>35.3%</td>
<td>51</td>
<td>46.5%</td>
<td>114</td>
<td></td>
</tr>
<tr>
<td>A8xxxx</td>
<td>214</td>
<td>18.3%</td>
<td>82</td>
<td>28.0%</td>
<td>214</td>
<td></td>
</tr>
<tr>
<td>A9xxxx</td>
<td>481</td>
<td>36.2%</td>
<td>163</td>
<td>43.2%</td>
<td>481</td>
<td></td>
</tr>
</tbody>
</table>

Note the two busiest providers had widely different rates.
Measure Analysis:
Identify Drivers of the CS Rate (Step 1)

What Drives Our Primary CS Rate?

<table>
<thead>
<tr>
<th>Category</th>
<th>NTSV</th>
<th>MTSV</th>
<th>Preterm/Multiples/Breech</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo Hospital</td>
<td>16.2%</td>
<td>2.6%</td>
<td>7.3%</td>
</tr>
<tr>
<td>All Community Nurseries</td>
<td>10.9%</td>
<td>2.9%</td>
<td>6.8%</td>
</tr>
<tr>
<td>CA Statewide</td>
<td>10.7%</td>
<td>2.9%</td>
<td>6.5%</td>
</tr>
</tbody>
</table>

Primary CS Rate Divided into 3 Major Components

NTSV: Nulliparous (first-birth), Term, Singleton, Vertex presentation
MTSV: Multiparous (second or more-birth), Term, Singleton, Vertex presentation
Measure Analysis:
Identify Drivers of the CS Rate (Step 2)

What Drives Our Nulliparous Term Singleton Vertex (NTSV) CS Rate?

NTSV CS Rate Divided into 3 Major Components

- Demographic Hospital: 20.8% Spontaneous Labor, 7.3% Induced Labor, 6% No Labor, Total: 34.1%
- All Community Nurseries: 14.1% Spontaneous Labor, 7.3% Induced Labor, 4.9% No Labor, Total: 26.3%
- CA Statewide: 14.2% Spontaneous Labor, 7.3% Induced Labor, 4.6% No Labor, Total: 26.1%
Measure Adherence to Labor Management Guidelines

Case Reviews of NTSV CS—Do we follow the Labor Guidelines?

<table>
<thead>
<tr>
<th>Category</th>
<th>Guidelines Not Met</th>
<th>Guidelines Met</th>
<th>Overall 59.1% Met Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor Abnormalities (44 cases)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max Dilation &lt;6cm, Spontaneous Labor</td>
<td>2</td>
<td>N/A (0.0%)</td>
<td></td>
</tr>
<tr>
<td>Max Dilation &lt;6cm, Induced</td>
<td>1</td>
<td>10 (90.9%)</td>
<td></td>
</tr>
<tr>
<td>Active Phase (≥6cm)</td>
<td>12</td>
<td>10 (45.5%)</td>
<td></td>
</tr>
<tr>
<td>Second Stage (10cm/Complete)</td>
<td>3</td>
<td>6 (66.7%)</td>
<td></td>
</tr>
</tbody>
</table>

- Other Labor Management Bundles
  - Discouraging Early Labor Admissions
  - Labor Inductions

Screen Shot from the CMQCC Maternal Data Center
Assess Impact of QI Interventions using Control Charts

C-Section Rate: Low Risk-NTSV (PC-02)

Measure
- Hospital Trend
- Control Chart
- Definition
- Measure Analysis

Comparisons
- Peer
- NICU Level
- By Payer
- By Provider
- By Practice Group

Screen Shot from the CMQCC Maternal Data Center
Components of Quality Improvement

CMQCC Maternal Data Center
Data Monitoring and Evaluation

CMQCC Toolkit
Evidence-Based Support Tools

CMQCC Collaborative
Engagement of Hospital Clinicians and Administrators

Improved Maternity Care

Your Hospital!
Look Who’s Endorsing CMQCC!

California health care leadership endorses and recommends CMQCC membership, including:

- Hospital Quality Institute
  *Julianne M. Morath, RN, MS, CPPS, President/CEO*

- Department of Health Care Services/ (Medi-Cal)
  *Neal Kohatsu, MD, MPH, Medical Director*

- Covered California
  *Lance Lang, MD Chief Medical Officer*

- California Public Employees Retirement System (CalPERS)
  *Doug McKeever, Deputy Executive Officer*

- California Health and Human Services Agency
  *Diana Dooley, Secretary*

- California Department of Public Health
  *Karen Smith, MD, MPH, Director, State Public Health Officer*
Joining CMQCC....as simple as ABC

A. Complete Participation Agreements
   - Maternal Data Center
   - CS collaborative (optional)

B. Submit Patient Discharge Data
   
   *Data your hospital already generates for OSHPD!*

C. Participate in training session with CMQCC

CMQCC support.....to advance your quality agenda!
Contacts and Resources

Maternal Data Center
- Anne Castles or Amanda Woods
  (datacenter@cmqcc.org)

Collaborative
- Kim Werkmeister (kwerkmeister@cmqcc.org)

Toolkit
- Nancy Peterson (peterson@cmqcc.org)

Resources @ www.CMQCC.org
- Collaborative FAQs
- MDC Project Description
- Toolkits