Perinatal Quality Collaboratives 101

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Objectives

At the conclusion of this webinar, participants will be able to:

• Explain the need and purpose of Perinatal Quality Collaboratives (PQCs).
• Understand how some PQCs function and the basic structure of a Collaborative.
• Discuss the successes PQCs have achieved.
Perinatal Quality Collaboratives

PQCs are networks of perinatal care providers and public health professionals working to improve pregnancy outcomes for women and newborns by advancing evidence-based clinical practices and processes.
Need for PQC

- Preterm birth affects more than 500,000 babies, or 1 of every 8 infants born in the United States.

- **It is the most frequent cause of infant death**, the leading cause of long-term neurological disabilities in children.

- Costs the U.S. health care system more than $26 billion each year.

*(CDC – March 2012)*
Purpose of PQC

New York State Perinatal Quality Collaborative (NYSPQC) Mission:
Provide the best and safest care for women and infants in New York by preventing and minimizing harm through the translation of evidence-based practice guidelines to clinical practice.
Purpose of PQCs

Ohio Perinatal Quality Collaborative (OPQC) Mission:
Through collaborative use of improvement science methods, to reduce preterm births & improve outcomes of preterm newborns in Ohio as soon as possible.
PQC Areas of Focus

Obstetrical outcomes

• Preterm delivery – NY and OH
• Use of antenatal steroids – OH

Neonatal outcomes

• Reducing Blood Stream Infections (BSI) – OH
• Reducing Central Line Associated Blood Stream Infections (CLABSI) – NY
• Reducing the percentage of newborns <31 weeks GA discharged below the tenth percentile for growth on Fenton scales for weight and head circumference – NY
OPQC Funding

• State dollars
• Federal match
• Grant
  – Center for Disease Control and Prevention
• March of Dimes
• In kind
NYSPQC Funding

• Limited state dollars
• Grant
  – Center for Disease Control and Prevention
• In-kind
What does it take to build a successful, statewide, perinatal improvement collaborative?

Ed Donovan, MD, founder OPQC

• Population-based, rapid-response data system

• Well-connected, committed, clinical leadership in both obstetrics and pediatrics (at least 25% effort)

• Access to baseline data

• Involvement of key state agencies & professional organizations

• Centralized administrative infrastructure

• Access to rigorous, improvement science expertise

• Integration of community and academic providers

• Open to idea of transparent sharing of results
Model for Improvement

• Both programs are statewide, multi-stakeholder networks dedicated to improving perinatal health within their state.
• Both employ a modified version of the Institute for Healthcare Improvement’s (IHI) Breakthrough Series Model (BTS).
• Both have defined measures to follow outcomes.
The BTS promotes use of rapid Plan-Do-Study-Act (PDSA) cycles, where teams are taught to address problems as they arise by testing interventions and subsequent modifications in small steps to achieve desired change.

NYSPQC and OPQC bring teams together in face-to-face sessions and on monthly Coaching Calls to review individual and aggregate data, learn from teams that have been successful at making changes and achieving improved outcomes, and with expert guidance, apply the IHI Model-for-Improvement to test specific strategies.
New York State Perinatal Quality Collaborative

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Importance of NYSPQC

Preterm birth is the leading cause of infant mortality, and New York ranks 8th nationally in infant mortality and 22nd in premature births.
NYSPQC Focus Areas

• Obstetrical Outcome – Preterm Deliveries
• Neonatal Outcome – Enteral Feeding
• Neonatal Outcome – Central Line Associated Blood Stream Infections (CLABSI)
Leadership

• Executive leadership at NYS DOH
• NYSPQC Advisory Work Group
• Obstetrics Expert Work Group
• Neonatal Expert Work Group
NYSPQC Obstetrical Improvement Project
Measurement strategy and process for data collection

• Formally define scheduled deliveries
  – All inductions and c-sections without labor
• Target sample size
  – Collect data on all scheduled deliveries between 36 0/7 and 38 6/7 weeks gestational age
• Monthly data submission
• Followed improvement measures
  – Run charts
% All scheduled deliveries without indication

Desired Change:
Reduction of scheduled deliveries performed without appropriate indication for pregnant women of 36 0/7 to 38 6/7 weeks gestation

Measure 3. Percent of all scheduled deliveries at 36 0/7 to 38 6/7 weeks without medical or obstetrical indication documented of all scheduled deliveries

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent</th>
<th>Denominator</th>
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<tbody>
<tr>
<td>2010</td>
<td>24.9%</td>
<td>253</td>
</tr>
<tr>
<td>2011</td>
<td>17.9%</td>
<td>274</td>
</tr>
<tr>
<td>2012</td>
<td>15.1%</td>
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</tbody>
</table>

Measure 3: % All scheduled deliveries without indication
†Scheduled deliveries between September 2010 and March 2012
Number of scheduled deliveries=5,905
New York State Perinatal Quality Collaborative
September 2010 – March 2012

Scheduled delivery

• 5,905 Scheduled Deliveries
  – 61.2% C-sections
  – 38.8% Vaginal

Scheduled deliveries without medical indication

• All scheduled deliveries decreased by 65.1%
• Induction decreased by 69.4%
• C-sections decreased by 64%
• Primary C-sections decreased by 78.5%

Maternal Education about preterm delivery increased by 53.8%
Obstetrical Improvement Project
Next Steps

• Partnered with NYS Partnership for Patients
  – Joint initiative of Healthcare Association of NYS
    and Greater NY Hospital Association

• Expanded to include all NYS birthing hospitals

• Approximately 100 facilities currently signed
  up to participate
NYSPQC Enteral Feeding Improvement Project
Neonatal Intervention

**Aim**

In one year, reduce statewide the percentage of newborns ≤ 30 6/7 weeks gestational age that are discharged from the NICU below the 10th percentile.
Median Newborn Birth (BWT) & Discharge (DWT) Weights in Relation to Fenton Growth Percentiles for All NYS Regional Perinatal Centers (RPCs) (2009)

Weeks Gestational Age

Weight in Grams

Fenton 10%-90%  Fenton 50%  RPC Median BWT  RPC Median DWT

Transfers Out
Mix of Home and Transfer
Mostly D/C To Home

Long Hospitalization
Difficult Course

Weeks Gestational Age

Weight in Grams

Fenton 10%-90%  Fenton 50%  RPC Median BWT  RPC Median DWT

Mostly D/C To Home

Long Hospitalization

Difficult Course

Transfers Out
Mix of Home and Transfer

Mostly D/C To Home
Incidence of Discharge Weight < 10th Percentile Among NYS RPCs (2010)

(NYS Mean = 32.6%)
Relative Risk of DWT < 10th Percentile

Sorted by Effect Size
Enteral Feeding QI Initiative Summary

- Feeding practices and protocols vary within and among RPCs
- Risk of discharge below Fenton’s 10th percentile for postnatal weight varies widely among RPCs
- Simply having protocols to initiate, advance or evaluate feeding tolerance is not associated with growth
- Risk of D/C weight < 10th percentile is lower with earlier first enteral and earlier full enteral feedings
- Risk of NEC is higher with later and longer trophic feeding and earlier introduction of fortifier
Enteral Feeding QI Initiative
Next Steps

• Compare 2011 outcomes data to 2010 baseline
• Incorporate head circumference at birth and discharge
• Compare practice and protocol usage between high and low performing RPCs
• Identify and share best practices
NYSPQC CLABSI Reduction Project

Staphylococcus epidermidis biofilm colonization of a catheter
Early in 2007, all 18 regional perinatal centers (RPCs) of New York State collaborated to decrease central line associated bloodstream infection (CLABSI) rates in their NICUs.
“Check, check, check, check, check, check”
Atul Gawande: The Checklist.
The New Yorker, Dec 10, 2007

Steps are no-brainers; known and taught for years
• Except, in more than a third of patients, doctors skipped at least one.
New rule: if doctors didn’t follow every step on the checklist, the nurses would have backup from the administration to intervene.
• Ten-day line-infection rate went from 11% → 0.
In this one hospital, the checklist prevented 43 infections, 8 deaths, and saved $2 million.

(1) Wash hands with soap.
(2) Clean the patient’s skin with chlorhexidine antiseptic.
(3) Put sterile drapes over the entire patient.
(4) Wear a sterile mask, hat, gown, and gloves.
(5) Put a sterile dressing over the catheter site once the line is in.

Pronovost 2001: Line infection checklist
Have we reduced CLABSI rates?

Central Line Associated Blood Stream Infections per Thousand Patient Days among NYS Regional Perinatal Centers 2007-2010
Source: NYS HAI Data Report 2010
SPECIAL FEATURE

Development of a statewide collaborative to decrease NICU central line-associated bloodstream infections

J Schu[1,2,3], RL Stricof[4], TP Stevens[5], IR Holzman[6,7], EP Shields[8], RM Angert[9], RS Wasserman-Hoff[10], SM Nafday[9] and L Saiman[11], for the New York State Regional Perinatal Centers and the New York State Department of Health

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CLABSI Reduction Project Next Steps

• CLABSI initiative set to be disseminated to 35 Level III nurseries in New York State
Ohio Perinatal Quality Collaborative

Barbara Rose, MPH, RN
Program Director, Ohio Perinatal Quality Collaborative
Importance of OPQC

Preterm birth is the leading cause of infant mortality, and Ohio ranks 35th nationally in infant mortality and 31st in premature births.
Basic Structure

• Leadership/administration, quality improvement, data infrastructure
• Faculty, paid staff, regional clinical leaders, front line provider teams!
• State Departments of Health and Medicaid
Has OPQC been successful?

• Initial projects produced a 20% sustained decrease in bloodstream infections in premature infants 22-29 wks. gestation in 24 Neonatal Intensive Care Units (NICUs).

• Since September 2008, this has resulted in 6,000 fewer than expected Ohio births between 36-38 weeks per year, and 180 fewer near-term infants admitted to the NICU per year. Together, the reductions in infections and NICU admissions created estimated savings of at least $11 million annually.
Reducing Blood Stream Infection Rates

AIM

To reduce late onset (>72 hours) blood stream/CSF infections in infants 22-29 weeks gestational age to < 10% in Ohio NICUs

1) Achieve >90% compliance with the reliable use of the catheter care maintenance bundle for all NICU teams, and

2) Achieve a further reduction in preterm hospital-acquired infection (HAI) by increasing the proportion of infants in the 24 participating NICUs receiving human milk feedings.
OPQC Neo Leader-Michele Walsh, MD

• In contrast to adult and pediatric central line infection projects, line care alone was not effective in reducing BSI.

• A combined approach to infection prevention using BOTH line safety techniques and increased use of human milk appears to be more effective.

• To improve state wide perinatal health OBs and Neos must work together!
Increasing Use of Antenatal Corticosteroids

Jay Iams, MD  OB Leader

Aim: To increase the percentage of infants born in Ohio at 24 0/7 to 33 6/7 weeks gestation who receive pre-delivery ANCS to > 90%
Promoting Full Term Delivery

AIM

Reduce scheduled deliveries between 36 and 38 6/7 weeks gestation without medical indication to <5% throughout all Ohio maternity hospitals

Percent distribution of Ohio full-term and near-term births, by month
January 2006 to July 2012

Since OPQC inception, 26,300 expected near-term births statewide were delayed to full-term.

Baseline averages were calculated from the initial 24 months, January 2006 to December 2007.
“The focus of healthcare for women and infants over the next century depends on the quality of the data collected by those who fill out the birth certificates”.

Bill Callaghan, MD MPH
Centers for Disease Control and Prevention
December 1, 2011
Spreading the scheduled delivery project & improving accuracy of the birth certificate data

Births induced at 36-38 weeks with no apparent medical indication for early delivery, by quarter, 2006-2012
Aggregate results for 15 pilot sites

Source: Ohio Department of Health, Vital Statistics

Goal
Quarterly Percent
Baseline Average Percent
Control Limits
Ohio’s 39-Week Project
Collaborating to Deliver Quality Care & Healthy Babies

Scheduled Early Deliveries Have Increased
Between 1990 and 2006, the rate of U.S. babies delivered before 39 weeks of gestation rose sharply, from 39.3 percent to 41.7 percent. Infants delivered before they have reached full gestational term, 39 to 41 weeks, are more likely to get sick or die. The last few weeks of gestation are vitally important in a baby’s development. Major organs such as the brain, lungs and liver are in the final crucial stages of growth.

Saving Babies’ Lives & Millions in Health Care Costs
Perinatal leaders, doctors and nurses, the Ohio Department of Health, the Ohio Department of Job and Family Services (Ohio’s Medicaid agency), and other policymakers in Ohio joined together in March 2007 to create the Ohio Perinatal Quality Collaborative (OPQC). OPQC’s efforts are reducing scheduled early deliveries in Ohio by making sure hospitals have access to best methods of care for pregnant women, increasing collaboration among hospitals, and providing the research and evidence that perinatal leaders and clinicians need to test and implement effective strategies.

From September 2008–June 2010, OPQC worked closely with 20 Ohio maternity hospitals, which deliver more than 47 percent of babies born in the state, to prevent unnecessary scheduled early deliveries. Some of the strategies that OPQC helped hospitals and providers implement included:

- Recommending best practice pregnancy dating with an ultrasound before 20 weeks gestation;
- Establishing a peer-reviewed written policy that provides clear guidelines and criteria about when deliveries can be scheduled;
- Recruiting physician champions who can manage and reinforce the policy systematically;
- Publicly sharing hospital-level data on the prevalence of scheduled deliveries less than 39 weeks.

As a result of OPQC’s 39-Week Project, to date, nearly 23,000 babies that would have been delivered at 36-38 weeks were delayed to 39 weeks, representing an increase of 8 percent in full-term deliveries. This shift helped prevent approximately 500 admissions to neonatal intensive care units and 34 infant deaths. In addition, this project has saved approximately $27 million in health care costs through avoided NICU admissions.

For more information about the Ohio Perinatal Quality Collaborative’s 39-week Project, please email:
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OPQC Goals in 2012
OPQC is striving for continued success. In order to explore best ways to share successful practices, the Collaborative is working with a pilot group of 16 additional hospitals that represent different characteristics from the initial set of 20 hospitals. The Collaborative will eventually expand this project to include all 116 maternity hospitals in Ohio.

OPQC will partner with all Ohio maternity hospitals to:
- Eliminate all scheduled early deliveries without medical necessity;
- Reduce preventable infections in premature newborns;
- Improve birth certificate data entry quality and use.

Benefits of Joining the Collaborative
- Hospitals can participate in learning sessions and Webinars to share best practices for improving birth outcomes.
- OPQC faculty and staff can help hospitals troubleshoot questions about compliance, documentation and safety.
- Hospitals retain their autonomy and get access to best practices from across the state.
- OPQC, in partnership with the Ohio Department of Health Vital Statistics staff, will establish best practices and train staff on how to improve birth certificate data collection. Improving collection practices can help hospitals build a valuable database and help inform their revenue in...
Christie Lillie (featured with son DJ) remembers nurses referring to mother's milk as “liquid gold” and that made her realize how special every single drop of her milk was.
Projects Under Development

New OPQC projects under development for 2013:

• Neo: Neonatal Abstinence Syndrome (NAS)
• OB: Progesterone for women at risk of preterm birth
• Spread 39 wweekk, delivery project to 80 more maternity hospitals along w ANCS 'best practice" bundle
Wrap Up – Need and Purpose

Need for PQC<s</i>s:

• Preterm birth affects more than 500,000 babies, or 1 of every 8 infants born in the U.S. It is the most frequent cause of infant death.

Purpose of PQC<s</i>s:

• Improve outcomes for mothers and babies through the use of improvement science and evidence-based clinical practices.
Wrap Up – Successful PQCs

**NYSPQC**
- Reducing preterm deliveries
- Improving enteral feeding to increase weight gain
- Reducing CLABSIs in NICUs

**OPQC**
- Reducing preterm deliveries
- Increase appropriate use of antenatal steroids
- Reducing CLABSIs in NICUs
Questions?

Participants may ask questions about how state-based collaborative efforts have led to quality improvement in the presenters’ states and how these Perinatal Quality Collaboratives function.