What is the Mission of OPQC?

Reducing prematurity-related poor outcomes for babies in Ohio

Goal:

Through collaborative use of improvement science methods, Reduce preterm births and improve outcomes of preterm newborns in Ohio as quickly as possible.
Key Facts: The Epidemiology of Preterm Birth

• PTB = Leading Cause of Infant Mortality

• 75% of Infant Mortality in 1st Month of Life

• 75% of PTBs occur between 34-36 weeks
  • They can have life long health problems

• 75% of Perinatal Mortality occurs in babies born before 32 weeks’ gestation
OPQC History & Membership

2007: Ohio’s Infant Mortality Rates Are Terrible!

2008 - 2011

• 20 Charter Member Maternity Hospitals
• 24 Charter Member Neonatal Intensive Care Units

2012 - 2013

• Expanded Membership to Include 85 More Ohio Maternity Hospitals → Almost All in Ohio

2013 and Beyond

• Expanding Membership to Include Ohio Mothers, Fathers, and Families

OPQC Is A Voluntary Organization of Ohio Stakeholders Who Care About Fetal & Infant Health
The OPQC Charter Teams \{24 Neo + 20 OB\}

Cleveland
- Cleveland Clinic (NEO)
- Fairview Hospital (NEO & OB)
- Hillcrest Hospital (NEO & OB)
- MetroHealth Medical Center (NEO & OB)
- University Hospital – MacDonald Women’s Hospital (OB)
- University Hospital – Cleveland – Rainbow Babies (NEO)

Akron
- Akron Children’s Hospital (NEO & OB)
- Akron General Medical Center (OB)
- Summa Health System (NEO & OB)

Canton
- Aultman Hospital (NEO & OB)

Dayton
- Dayton Children’s Medical Center (NEO)
- Miami Valley Hospital (OB)

Cincinnati
- Cincinnati Children’s Hospital Medical Center (NEO)
- Good Samaritan Hospital (NEO & OB)
- Mercy Anderson Hospital (OB)
- University Hospital – Cincinnati (NEO & OB)

Toledo
- Promedica Toledo Children’s Hospital (NEO)
- Promedica Toledo Hospital (OB)
- St. Vincent Mercy Medical Center (NEO & OB)

Hillcrest Hospital (NEO & OB)
- University Hospital – MacDonald Women’s Hospital (OB)

Mount Carmel East (NEO & OB)
- Mount Carmel St. Ann’s (NEO & OB)
- Mount Carmel West (NEO & OB)
- Nationwide Children’s Hospital (NEO)
- Doctor’s Hospital (Nationwide NEO)
- Grant Hospital (Nationwide NEO)
- Riverside Methodist Hospital (OB+ Nationwide NEO)
- The Ohio State University Medical Center (NEO & OB)

~ HALF OF OHIO BIRTHS OCCUR IN THESE 20 OB CENTERS
The Ohio Perinatal Quality Collaborative

**Obstetrics**
- 39-Week Scheduled Deliveries without medical indication
- Steroids for women at risk for preterm birth (24/7 - 33 6/7)
  - Done → Transition to BC Surveillance
- Progesterone for Preterm Birth Risk
- Spread to all maternity hospitals in Ohio

**Neonatal**
- Blood Stream Infections: High reliability of line maintenance bundle
- Use of human milk in infants 22-29 weeks GA
  - An OPQC NAS Project?
  - OCHA Pilot NAS in 6 children’s hospitals

Increase Birth Data Accuracy & Online modules

2013 - 15
How Does OPQC Get Results?

The IHI Model for Improvement

• Select A Common Project
• **PLAN** a “Change Package” and share with OPQC Teams:
  • Recommended best practices
  • Ideas/interventions for improvement
  • Outcomes to measure/track
• Define how we will know if a change = improvement
• **DO** the Change, **STUDY** the results, and then **ACT**
• Teams join monthly webinars to share lessons learned, discuss results, and identify new ideas to “test”, & examine aggregate data/outcomes
• Teams meet face-to-face at at least twice per year

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Ohio Perinatal Quality Collaborative

Criteria for Choosing Projects

- Prematurity related
- Variation in practice
- Existing benchmark
- Measurable outcome
- Population impact
- Prior success
- Participant enthusiasm
- Public enthusiasm

- March of Dimes
- Ohio ACOG & AAP
- CDC

- 39 Weeks
- Antenatal Steroids
- Blood Stream Infection
- Breast Milk = Medicine
  - MgSO4 Neuro Rx
  - LBW Hypothermia
  - Late Preterm 34-36
  - Opioid Dependence
  - Progesterone

- March of Dimes
- Ohio ACOG & AAP
- CDC

- CDC
**Neonatologists Improve Care of Tiniest Babies**

**Initial Project**
Reducing Bloodstream Infections in Premature Infants

- Babies born at 22-29 weeks (11+ weeks early)
- High Risk for Infection
- 24 Level 3 NICUs, Working Together
- To Reduce infections

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The Initial OPQC Neo Project
A Series of Interventions = a BUNDLE

- Central Line Insertion Bundle
- Central Line Maintenance Bundle
- Earlier Start of Feedings
- Encouraging and Supporting Moms to Pump Their Own Milk
- Use Donor Milk if Mom’s Milk Not Available.
- Mother’s Milk Is Medicine!

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24 Ohio NICUs
Proportion of Infants 22-29 Weeks Gestation Discharged with at least 1 Nosocomial Infection

OPQC Is A Voluntary Organization of Ohio Stakeholders Who Care About Fetal & Infant Health
Growth Failure - Weight < 3% at Discharge
Infants Born at 22-29 Weeks’ Gestation
The OPQC Neo BSI Project
• Prevented 600 Infections
• Saved 75 Babies’ Lives

Together We Saved Enough Babies to Fill TWO School Buses!
A statewide initiative to reduce inappropriate scheduled births at 36\(^{0/7}\) – 38\(^{6/7}\) weeks’ gestation

The Ohio Perinatal Quality Collaborative Writing Committee

20 hospitals = 47% of Ohio births
18,384 births between 36\(^0\) – 38\(^6\)
4780 (26%) scheduled
13,604 (74%) unscheduled

Observe X 2 Months

Project data 9-1-08 → 11-30-09
Distribution of Ohio Births By Gestational Age And Month
January 2006 → July 2013

Since OPQC inception, 36,200 expected births <39 weeks have shifted to ≥39 weeks.

Baseline averages were calculated from the initial 24 months, January 2006 to December 2007.

PINK = 39 -41 Weeks   BLUE = 37 + 38 Weeks
Effects of the Initial OPQC 39 Week Scheduled Birth Project
September 2008 → July 2013

• 36,200 births moved from 37-38 to 39-41 wks

• Conservative estimate = 3% fewer “near term” NICU admissions: \( N = 1086 \)

• \( 1086 \times \$20,000 \) per NICU Admission
  \( \$21,720 \) million savings in 5 years
Dissemination of The 39 Week Delivery Project

Done in Waves
- Piloted in 15 Sites 2012
- 3 Subsequent Waves with Staggered Start Dates
  - Jan 2013 → Apr 2014
- Ohio Birth Registrars are excited to participate

Different from Charters
- Used Birth Registry data instead of hand collected
- Site Visits by BEACON QI Coordinators
- Monthly Calls
- Periodic Learning Mtgs
- Collaboration w/ ODH + ODH Office of Vital Statistics + CDC

OPQC
CDC
ODH
Can’t Change the Birth Certificate?


- Ask Birth Registrars to Focus on Key Variables in Worksheet
- Provide New Focus-Group-Tested Definitions for Key Data
Results of Phase 1
39 Week Dissemination Project

- *Hospital Birth Certificate Staff Excited!!*
- *Major Misunderstandings on Major Outcomes*
  - Determination of Gestational Age - Rounding Up!
  - Definition of Preeclampsia
  - Recognition of Antenatal Steroid Rx
  - Definition of Breast Feeding at Discharge
- Aggregate Rate Declined Significantly
- Significant Improvement in 10 of 15 Sites
Ohio births induced at 37-38 weeks with no apparent medical indication for early delivery, by OPQC member status and month, January 2006 to February 2013

Ohio Birth Certificate Data

Points beyond the vertical dashed line are based on preliminary data and are likely to change.

Legend:
- Non-OPQC
- Average, Non-OPQC
- OPQC
- Average, OPQC
Global Aim: Assist that all infants born between 24 0/7 and 33 6/7 weeks’ gestation receive appropriate antenatal corticosteroid treatment to reduce perinatal morbidity and mortality.

SMART 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%, by June 2013

Interventions

Key Drivers

- Documentation System
  - Identification of Appropriate ANCS Candidate
  - Identification of Appropriate Time for ANCS Administration
  - Optimal and Efficient Administration of ANCS
  - Awareness of Benefits and Risks

- Create an integrated system of recording ANCS administration among prenatal care sites and delivery sites encompassing all levels and acuity of care.
- Standardize birth certificate documentation of ANCS administration

- CHOOSE an ANCS Strategy or Guideline for your site

- Promote consistent use of common algorithm of ANCS administration for Betamethasone & Dexamethasone
  - Practitioners
    - Prescribing
    - Care Giving / Administering
  - Hospitals
    - Link to maternal transfer & tocolysis
  - Pharmacies
  - Distributors
  - Pharmaceutical Manufacturers

- Promote public awareness of benefits of ANCS
- Education of parents & non-perinatal providers
- Link to maternal transfer & tocolysis
- General risks and benefits
FINAL Aggregate Report of the OPQC Project to Improve Documentation of Antenatal Corticosteroid Use 2011 → 2013

ANCS Administration - Aggregate Data

Blue = Partial Course
Green = Full Course

OPQC HAND COLLECTED DATA on 3954 Infants 24 → 33+6 wks
Birth Registry ANCS Data OPQC Sites

Source: Ohio Department of Health, Vital Statistics

January 2010: Ohio Hospital Compare launched
January 2012: OPQC ANCS project begins

January 2006 → June 2013
A STATEWIDE QUALITY IMPROVEMENT PROJECT TO REDUCE OHIO PRETERM BIRTHS BEFORE 37, (35), AND 32 WEEKS’ GESTATION BY IDENTIFYING AND TREATING PREGNANT WOMEN ELIGIBLE FOR PROGESTERONE SUPPLEMENTATION

GLOBAL AIM: TO REDUCE INFANT MORTALITY IN OHIO BY REDUCING PRETERM BIRTH

SMART AIM: By July 1, 2015, Decrease the Rate of Preterm Birth before 37 Weeks’ from 10.6% to 9.7%, and before 32 weeks’ from 2.1% to 1.9%.
Key Drivers

- Identify Women with Prior Preterm Birth
- Identify Women with Short Cervix ≤ 20 mm
- Prescribe Progesterone to Eligible Women
- Remove Administrative Barriers to Receiving Progesterone Supplementation
- Track Outcomes in Participant Sites and in Ohio
Key Driver: Identify Women with **Prior Preterm Birth**

- **Identify Risk at 1\textsuperscript{st} Contact or Prenatal Visit**
  - Accelerated 1\textsuperscript{st} Appointment if Hx sPTB

- **Define Prior Spontaneous Preterm Birth**
  - Preterm Labor and P-PROM
  - Advanced Cervical Dilation
  - Anything Spontaneous at 16 → 36 Weeks
  - Born Alive or Stillborn
Key Driver:
Identify Women with **Short Cervix ≤ 20 mm**

- Sites Choose a Cx Sono Screening Algorithm
  - Selective Screen **In** = Women with Risk Factors
  - Selective Screen **Out** = Women w/o Risk Factors
  - Universal – Screen All at 18-22 weeks

- Algorithm for Rx and Follow Up
- Credentialed Sonographers to Measure Cervix
  - CLEAR or FMF or Prior NICHD Study Credentialed
Key Driver:
Prescribe Progesterone to Eligible Women

- Initiate Progesterone ASAP for Hx SPTB
  - Accelerated 1st Prenatal Visit
  - Presumptive Eligibility for Antenatal Care

- Adopt a Management Protocol
  - For Hx SPTB
  - For Short Cervix

- Make “Screen for PTB Risk” ≈ GBS, Rh, GDM
Sample Protocol to Identify Candidates for Progesterone Prophylaxis of Preterm Birth Using OB History and Transvaginal Cervical Ultrasound

Based on SMFM & ACOG 2012
Key Driver:
Remove Administrative Barriers to Receiving Progesterone Supplementation

- Pharmacy Coordination
- Insurance Coverage & Protocols
- Delivery and Administration of 17 α- OHPC
- Use of Vaginal Formulations
- Designate a Progesterone Coordinator
- Convene Participants to Assure Rx Received
Progesterone Prophylaxis
A Systems Approach To Expanded Rx
Plan – Do – Study – Act Cycles for Progesterone

- Roll Out to The Original Big 20
- Disseminate to 6 Major Metropolitan Areas
  - Start with 1 or 2 Hospital Affiliated Clinics
  - Private Drs. via Ohio ACOG, ABFP + Journals + Text
- Disseminate to Regions → Roll Out as in 39 Wk
  - e.g., SE & NE Ohio via Partners for Kids
- Regional Rates of PTB < 32, 35, 37 weeks
- Birth Registry and Hand Collected Data
- Medicaid Managed Care PTB Rates
The Ohio Progesterone Project

PLUS

- Strong Support in Ohio
  - Vital Statistics
  - Ohio Dept Health
  - OCPIM
- OPQC Track Record
- Collaborative Midwestern Spirit

MINUS

- New Intervention
- No Hx QI Project for P4
- Primarily Outpatient
- Initiators Remote from Adverse Outcomes
- Long Interval from Initiation to Outcomes

OPQC Is A Voluntary Organization of Ohio Stakeholders Who Care About Fetal & Infant Health
The Ohio Progesterone Project

- **Goal:** Reduce Ohio PTB & Related Infant Mortality
- **Expand Use of Cervical Sonography**
  - Expand and Train the Workforce
  - Create and Pay for Protocols
- **Make it Easy to Get Progesterone**
  - Create and Pay for Protocols
- **Outcome Measures**
  - Hand Collected Data
  - Medicaid and Private Insurers
  - Birth Registry Data – Births < 32, 35, 37 Weeks
  - **Infant Mortality Rate**!