Get on Board!
The Value of Collaborative Quality Improvement

TIPQC Annual Meeting
March 2, 2020

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Perinatal-Neonatal Quality Improvement Network of Massachusetts

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Goals
Convince you that state-based perinatal quality collaboratives are pretty awesome, and that if you’re not involved already, you should be!
Outline
1. A quick sidebar on Quality Improvement
2. Perinatal Quality Collaboratives

Disclaimers
I am definitely biased.
There are many ways to ‘do’ a PQC, and this is largely based on our Massachusetts experience.
This is somewhat neonatal-focused.
There is a lot I’m going to try to cover, and even more that I’m not.

A VERY quick sidebar on quality improvement
What is Quality Improvement?
QI is a formal approach to examining performance, and a systematic approach to improving it.

-- Unknown

Why focus on quality improvement in health care?

Why Quality Improvement?

Why Quality Improvement?

“...everyone in healthcare really has two jobs when they come to work every day: to do their work and to improve it.”

Vermont-Oxford Network
Has Quality Improvement Really Improved Outcomes for Babies in the Neonatal Intensive Care Unit?

Alan R. Spitzer, MD

Clin Perinatol 44 (2017) 469-483

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Fig. 2. The decline in neonatal mortality from 1990 to 2011 in the United States. (Data from National Vital Statistics Mortality Data.)

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Ok, let’s get to Perinatal Quality Collaboratives (PQCs)

State-based PQCs are now a thing.
TIPQC was one of the first!

What do state-based PQCs do?

- Improve Maternal & Newborn Outcomes
- Work at the Population Level
- QI Education
- Support Local QI Efforts
- Benchmarking
- Collaborative QI Projects
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What do state-based PQCs do?

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QI Education

Common ‘Mistakes’ in Improvement

- Not measuring what you’re improving
- Jumping to changes without a clear aim
- Implementing without testing
- Before and after analysis rather than measurement over time
- Not being able to sustain the gains
What do state-based PQCs do?

- Improve Maternal & Newborn Outcomes
- Work at the Population Level
- Collaborative QI Projects
- Benchmarking
- Support Local QI Efforts

QI Education

Support

Collaborative QI Projects

Improve Maternal & Newborn Outcomes

Bench-marking

Work at the Population Level
PQC Meetings

- Early NeoQIC meetings: just sharing local work!
  - Reducing ROP at UMass
  - Comprehensive CLABSI reduction at BMC
  - Redesign of CPAP delivery at St. Elizabeth’s
  - IVH reduction at Tufts
  - Optimizing growth at MGH
  - Admission temperature at Baystate
  - And many others....

Poster Fairs at PQC Conferences

Hospital Site Visits
What do state-based PQCs do?

- Improve Maternal & Newborn Outcomes
- QI Education
- Support Local QI Efforts
- Benchmarking
- Collaborative QI Projects
- Work at the Population Level

Benchmarking

- Comparing performance to external standards
- Typically done with data and measures
- Can also be done with practice surveys

*Benchmarking within a state PQC is better than with national networks.*
Benchmarking in NeoQIC

Transparency

- Share hospital IDs – know who’s who
- Share sample sizes – statistical comparisons
- Share practices – who’s doing what?
Benchmarking – My Opinion

• Comparing yourself to national benchmarks is a great start, and important.
• Comparing yourself to your state peers is much more compelling.
• Transparency dials benchmarking up to 11.

What do state-based PQCs do?

- Support Local QI Efforts
- Benchmarking
- Collaborative QI Projects
- QI Education
- Improve Maternal & Newborn Outcomes
- Work at the Population Level
Information from CDC website
Not a complete list

QI Methods for Collaborative QI

IHI Breakthrough Series

Quick side note about teams

Disciplines represented on NAS improvement teams:

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Response</th>
<th>%</th>
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<tr>
<td>Nurses</td>
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<tr>
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<td>22%</td>
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<tr>
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<tr>
<td>Patients or patient/family members</td>
<td>2</td>
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<tr>
<td>Senior hospital leaders</td>
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<td>22%</td>
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<td>Other (please list)</td>
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<td>41%</td>
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</table>
Quick side note about teams

Typical team leads for various projects:
• CLABSI → NPs, RNs
• Safe sleep → nurse educators
• Human milk → nutrition, lactation
• NAS → docs, RNs
• Respiratory care → docs, RTs

Collaborative QI with PQCs

1. Common Aims
2. Common Measures
3. Common(ish) Changes
4. Use Data to Drive Improvement!

Add collaboration, sharing, teamwork.

So…. does collaborative QI work?
Success Stories - NNPQC

- NICHQ
- CDC

State PQC Publications by Year in Pubmed

[based on fairly rough Pubmed keyword search]

Genetics:
Statewide quality improvement initiative to implement immediate postpartum long-acting reversible contraception

A Statewide Quality Improvement Collaborative to Increase Breastfeeding Rates in Tennessee

Evaluation of a Tennessee statewide initiative to reduce early elective deliveries using quasi-experimental methods

Improving neonatal resuscitation in Tennessee: a large-scale, quality improvement project


https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pqc.htm

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And PQCs are getting better at this!

Focus on Better PDSAs

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<th>Process</th>
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TIPQC Breastfeeding Project
PDSA Activities and Reliability

Focus on Sustainment

TIPQC Neonatal Resuscitation
Time to IV Access
Rigorous Statistics

CPQCC NICU Length of Stay
Control Charts for three hospitals
Lee et al, Pediatrics, 2018

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Rigorous Statistics

TIPQC Early Elective Deliveries
Interrupted Time Series Analyses
Thompson et al, BMC Health Services Research, 2019

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Rigorous Designs

Table 1. Schematic of Stepped Wedge Design

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<td>Week 7</td>
<td>6</td>
<td>7</td>
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Kaplan et al, Obstetrics & Gynecology, 2018

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Collaborative QI helps make single-center QI better.

What do state-based PQCs do?

Targeting Population-Level QI

At the end of the day, by definition, improving perinatal outcomes across the population should be the goal of all state-based PQCs.
Data sources for PQCs

Clinical records data
Administrative data

How can these data sources help PQCs move from hospital-level QI to population-level QI?

Clinical Data for Population-Level QI

• Most useful, but labor-intensive to obtain
• Can be near real-time
• Engage as many hospitals as possible
• Use comparative data to drive improvement
• Track statewide performance

Administrative Data for Population QI

• Already being collected
• Measures entire population
• Reliability uncertain (can be improved)
• Need to think about measure definitions
• Timeliness critical (and hard!)
• Pretty successful already on OB projects
Massachusetts NAS Dashboard

https://www.mass.gov/guides/neonatal-abstinence-syndrome-dashboard

EI Referrals and EI Enrollment

Population-level measures

By working at the population level, PQCs can target disparities.
PQCs Can Identify Disparities

Enrollment in EI for Infants with NAS

Opioid Use Disorder in Pregnancy

Massachusetts NAS Dashboard
https://www.mass.gov/guides/neonatal-abstinence-syndrome-dashboard

PQCs Can Identify Disparities

Any MAT, Non-Hispanic Black
Any MAT, Hispanic
Pharm, Non-Hispanic Black
Pharm, Hispanic
Rooming-in, Non-Hispanic Black
Rooming-in, Hispanic
Any BM, Non-Hispanic Black
Any BM, Hispanic
EI Referral, Non-Hispanic Black
EI Referral, Hispanic
Biologic Family, Non-Hispanic Black
Biologic Family, Hispanic

Odds Ratio with 95% Confidence Interval

NeoQIC Human Milk Project
Kaplan-Meier plot of mother’s milk use by race/ethnicity

NeoQIC Human Milk Project
Kaplan-Meier plot of mother’s milk use by race/ethnicity

Kaplan et al, Pediatrics, 2018
### Population-Level Improvement

1. Engage as many hospitals as possible
2. Drive improvement across all hospitals
3. Track statewide performance
4. Explore use of administrative data
5. Tackle social determinants and equity

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### What do state-based PQC do? A lot!

- **Easy!**
  - QI Education
  - Support Local QI Efforts
- **Fairly Easy**
  - Benchmarking
- **Not easy, but not hard**
  - Collaborative QI Projects
- **Hard, but worth it**
  - Improve Newborn Outcomes
  - Work at the Population Level

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### Why Should You Participate?
Why Should You Participate?

[Image of a football field with people and a golf cart]

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