Quality improvement in Birthing Hospitals to improve exclusive breastfeeding

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Disclosures

* None

* Member of the Connecticut Perinatal Quality Collaborative
Objectives

* Reflect on driver behind need for QI
* Increase awareness - perinatal Breastfeeding QI projects
* Examine components of QI
* Reflect on example of our hospital program
Breastfeeding 1

Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect

Cecilia Chirwa, RightNow, Arla, ODI Bono, Great Orphan, A Strong Action, Save the Children, UNICEF, World Health Organization

The importance of breastfeeding to low-income and middle-income countries is well recognized, but less attention is paid to its importance in high-income countries. In low-income and middle-income countries, 37% of children younger than 1 month of age are exclusively breastfed. With the exception of breastfeeding duration, the Characteristics of Breastfeeding and Nutritional Status of Children in the 21st Century project has shown that breastfeeding is associated with a lower risk of mortality due to infections and malnutrition, increases in intelligence, and probable reduction in overweight and diabetes. We did not find an association with chronic diseases such as obesity or with blood pressure or cholesterol, and we found no improvement in tooth decay with longer periods of breastfeeding. For ever-smokers, breastfeeding gave protection against breast cancer and increased life expectancy, and it might also protect against ovarian cancer and type 2 diabetes. The scaling up of breastfeeding in a near-universal level could prevent 120,000 annual deaths in children younger than 5 years and 200,000 annual deaths from breast cancer. Recent epidemiological and nutritional findings from the past decades expand the known benefits of breastfeeding for women and children, whether they are rich or poor.

Introduction

In all mammals, the reproductive cycle comprises both pregnancy and breastfeeding. In the absence of any known method, rhesus monkeys could have reared their young without supplementary feeding or stimulation (a finding with important implications in the field of reproduction science). The Jyllands-Posten in the newspaper, which reported on the scientific evidence for breastfeeding, noted that “breastfeeding is a natural process in both wild and domesticated animals.” This statement was challenged by the American Academy of Pediatrics, which in its 1980 report on the scientific evidence for breastfeeding noted that “if breastfeeding is associated with the protection of public health, maternal mortality, or infant mortality, the benefits are apparent.”

In the past three decades, the evidence behind breastfeeding recommendations has evolved markedly. Epidemiological studies have shown a clear link between breastfeeding and improved health outcomes, including reduced risk of infection, improved cognitive development, and lower risk of obesity. However, the benefits of breastfeeding are not limited to the mother and child. Breastfeeding has also been shown to improve the health of future generations and has been linked to reduced rates of chronic diseases such as diabetes and cardiovascular disease. As such, breastfeeding is an important part of global health strategy, and efforts to promote and support breastfeeding are critical to improving the health of mothers and children around the world.
Too few infants and young children are benefiting from appropriate breastfeeding practices.

Of the 140 million live births in 2015, **77 million** newborns had to wait too long to be put to the breast.

Only 45 per cent of newborns were put to the breast within the first hour of life.

3 out of 5 infants under 6 months of age are not receiving the protective benefits of exclusive breastfeeding.

Breastfeeding rates **decrease by about one third** between 12 and 23 months.

- 12-15 months: 74%
- 20-23 months: 46%

The per cent of children breastfed at 1 year (12-15 months) and 2 years (20-23 months)

We must change the story and make sure that all women who choose to breastfeed have the support they need from their governments, health systems, workplaces, communities and families.
The Baby-friendly Hospital Initiative (BFHI)

- Launched in 1991
- Key component of the WHO/UNICEF Global Strategy for Infant and Young Child Feeding

- 58 reports from 19 countries - broad
- **Adherence** to BFHI Ten Steps has a positive effect on short, medium, and long term breastfeeding success
- **Dose response** – number of Steps and improved breastfeeding outcome
- **Community** support, #10, essential for long term success
- Avoiding in-hospital supplementation
In October 2003, CDC convened an expert panel of researchers with specific experience in surveillance and monitoring of hospital practices related to breastfeeding.

At the time, no system in the U.S. collected nationally representative data on these practices.

The Expert Panel’s recommendation was to establish an ongoing, national system to monitor and evaluate hospital practices related to breastfeeding among all facilities that routinely provide intrapartum care in the U.S.
The CDC mPINC Survey

* 2007 - first national survey of maternity

* Administered every two years to every facility in the U.S. that routinely provides maternity care services

* Completed by a key informant
### CDC National Survey of Maternity Care Practices in Infant Nutrition and Care (mPINC)

#### Dimensions of Care in the mPINC Survey

<table>
<thead>
<tr>
<th>Labor and Delivery Care</th>
<th>Feeding of Breastfed Infants</th>
<th>Breastfeeding Assistance</th>
<th>Contact Between Mother and Infant</th>
<th>Facility Discharge Care</th>
<th>Staff Training</th>
<th>Structural and Organizational Aspects of Care Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial skin-to-skin contact</td>
<td>Initial feeding received after birth</td>
<td>Documentation of feeding decision</td>
<td>Separation of mother and newborn during transition to receiving patient care units</td>
<td>Assurance of ambulatory breastfeeding support</td>
<td>Preparation of new staff</td>
<td>Breastfeeding policy</td>
</tr>
<tr>
<td>Initial breastfeeding opportunity</td>
<td>Supplementary feedings</td>
<td>Breastfeeding advice and counseling</td>
<td>Patient rooming-in</td>
<td>Distribution of “discharge packs” containing infant formula</td>
<td>Continuing education</td>
<td>Communication of breastfeeding policy</td>
</tr>
<tr>
<td>Routine procedures performed skin-to-skin</td>
<td></td>
<td>Assessment and observation of breastfeeding</td>
<td>Instances of mother infant separation throughout the intrapartum stay</td>
<td></td>
<td>Competency assessment</td>
<td>Infant feeding documentation policy</td>
</tr>
</tbody>
</table>

**Note:** The table structure and specific items mentioned in the text are intended to highlight various dimensions of care that are surveyed in the mPINC study. The content is presented in a way that reflects the survey's focus on different aspects of maternity care, including labor and delivery, feeding practices, breastfeeding assistance, contact between mother and infant, facility discharge care, staff training, and structural and organizational aspects of care delivery.

www.CDC.gov/mpinc
However...hospitals are making progress on the Ten Steps

Percentage of hospitals using the Ten Steps to Successful Breastfeeding

<table>
<thead>
<tr>
<th>STEPS</th>
<th>% of hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Model breastfeeding policy</td>
<td></td>
</tr>
<tr>
<td>2 Staff competency assessment</td>
<td></td>
</tr>
<tr>
<td>3 Prenatal breastfeeding education</td>
<td></td>
</tr>
<tr>
<td>4 Early initiation of breastfeeding</td>
<td></td>
</tr>
<tr>
<td>5 Teach breastfeeding techniques</td>
<td></td>
</tr>
<tr>
<td>6 Limit non-breast milk feeds</td>
<td></td>
</tr>
<tr>
<td>7 Rooming-in</td>
<td></td>
</tr>
<tr>
<td>8 Teach feeding cues</td>
<td></td>
</tr>
<tr>
<td>9 Limit use of pacifiers</td>
<td></td>
</tr>
<tr>
<td>10 Post-discharge support</td>
<td></td>
</tr>
</tbody>
</table>

Hospital Successes

89 hospitals in 29 states

With CDC support, the Best Fed Beginnings program helped 89 hospitals in 29 states work towards Baby-Friendly status. As of August 2015, 50 of these hospitals were designated. The other 39 hospitals reached the final phase of designation.

13 hospitals in Indian Country

Since the Indian Health Service (IHS) launched its Baby-Friendly hospital effort in 2011, all 13 Federal IHS hospitals have achieved Baby-Friendly status.

Percentage of US babies born in Baby-Friendly hospitals increased from 1% in 2005 to 14% in 2015.

More hospitals are using a majority of the Ten Steps

<table>
<thead>
<tr>
<th>% of hospitals</th>
<th>2007</th>
<th>2009</th>
<th>2011</th>
<th>2013</th>
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</thead>
<tbody>
<tr>
<td>25%</td>
<td>29%</td>
<td>37%</td>
<td>43%</td>
<td>54%</td>
</tr>
</tbody>
</table>

SOURCE: CDC’s Maternity Practices in Infant Nutrition and Care Survey.
Percentage of babies breastfeeding during the first year

Any breastfeeding

Exclusive breastfeeding

Exclusive breastfeeding is defined as only breast milk and needed medications or micronutrients.

% of babies

0 20% 40% 60% 80% 100%

Age of baby

0 3 months 6 months 9 months 12 months

**Healthy People 2020 Objectives**

<table>
<thead>
<tr>
<th><em><em>MICH</em>-21:</em>* Increase the proportion of infants who are breastfed</th>
<th><strong>Target</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>MICH-21.1: Ever</td>
<td>81.9%</td>
</tr>
<tr>
<td>MICH-21.2: At 6 months</td>
<td>60.6%</td>
</tr>
<tr>
<td>MICH-21.3: At 1 year</td>
<td>34.1%</td>
</tr>
<tr>
<td>MICH-21.4: Exclusively through 3 months</td>
<td>46.2%</td>
</tr>
<tr>
<td>MICH-21.5: Exclusively through 6 months</td>
<td>25.5%</td>
</tr>
</tbody>
</table>

**MICH-22:** Increase the proportion of employers that have worksite lactation support programs.  
Target: 38%

**MICH-23:** Reduce the proportion of breastfed newborns who receive formula supplementation within the first 2 days of life. 
Target: 14.2%

**MICH-24:** Increase the proportion of live births that occur in facilities that provide recommended care for lactating mothers and their babies.  
Target: 8.1%

*Maternal Infant and Child Health*
## Healthy People 2020 Objectives

<table>
<thead>
<tr>
<th>Objective</th>
<th>Baseline (year measured)</th>
<th>2020 Target %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase the proportion of infants who are breastfed:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever</td>
<td>74.0</td>
<td>81.9</td>
</tr>
<tr>
<td>At 6 months</td>
<td>43.5</td>
<td>60.6</td>
</tr>
<tr>
<td>At 1 year</td>
<td>22.7</td>
<td>34.1</td>
</tr>
<tr>
<td>Exclusively through 3 months</td>
<td>33.6</td>
<td>46.2</td>
</tr>
<tr>
<td>Exclusively through 6 months</td>
<td>14.1</td>
<td>25.5</td>
</tr>
<tr>
<td>Increase the proportion of employers that have worksite lactation support programs</td>
<td>25.0 (2009)</td>
<td>38.0</td>
</tr>
<tr>
<td>Reduce the proportion of breastfed newborns who receive formula supplementation within the first 2 days of life</td>
<td>24.2 (2006 births)</td>
<td>14.2</td>
</tr>
<tr>
<td>Increase the proportion of live births that occur in facilities that provide recommended care for lactating mothers and their babies</td>
<td>2.9 (2009)</td>
<td>8.1</td>
</tr>
</tbody>
</table>
Lactation support by IBCLC and CLC is monitored and the trend is on the rise.
Most recent data from 2013 is shown:
Breastfeeding rates for infants born in 2011 come from the U.S. National Immunization Surveys (NIS), 2012 and 2013. This nationwide survey provides current national, state, and selected urban-area estimates of vaccination coverage rates for U.S. children ages 19 to 35 months.

Since July 2001, breastfeeding questions have been asked on the NIS to assess the population’s breastfeeding practices. The NIS sampling frame was expanded in 2011 to include a cellular telephone sample of respondents, called a dual-frame sample. This is the first year CDC is releasing breastfeeding rates based on the dual-frame sample.

![Breastfeeding Rates Table]

<table>
<thead>
<tr>
<th>State</th>
<th>Ever Breastfed</th>
<th>Breastfeeding at 6 months</th>
<th>Breastfeeding at 12 months</th>
<th>Exclusive breastfeeding at 3 months</th>
<th>Exclusive breastfeeding at 18 months</th>
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<td>49.4</td>
<td>26.7</td>
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<tr>
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<td>32.1</td>
<td>11.8</td>
<td>25.6</td>
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<tr>
<td>Alaska</td>
<td>87.3</td>
<td>64.3</td>
<td>42.5</td>
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<td>81.6</td>
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<td>56.6</td>
<td>30.0</td>
<td>43.6</td>
<td>16.2</td>
</tr>
</tbody>
</table>

Source: Centers for Disease Control and Prevention National Immunization Survey (NIS), 2011 birth.
### State’s BF Support Indicators 2013

<table>
<thead>
<tr>
<th>State</th>
<th>Average mPINC Score</th>
<th>Percent of live births occurring at Baby-Friendly Facilities</th>
<th>Percent of breastfed infants receiving formula before 2 days of age</th>
<th>Number of La Leche League Leaders per 1,000 live births</th>
<th>Number of CLCs* per 1,000 live births</th>
<th>Number of IBCLCs* per 1,000 live births</th>
<th>State’s child care regulation supports onsite breastfeeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. National</td>
<td>75</td>
<td>7.79</td>
<td>19.4</td>
<td>0.90</td>
<td>3.84</td>
<td>3.48</td>
<td>7</td>
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<td>27.0</td>
<td>0.62</td>
<td>1.49</td>
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<td>11.9</td>
<td>1.23</td>
<td>4.90</td>
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HP2020 goals: 81.9 60.6 34.1 46.2 25.5

Source: Centers for Disease Control and Prevention National Immunization Survey (NIS), 2011 births.

The 2011 rates are based on the landline and cellular telephone samples in NIS, referred to as the dual-frame sample.

1This is the first year CDC is releasing breastfeeding rates based on the dual-frame sample. For a description of the impact on breastfeeding rates when NIS added a cellular telephone sample of respondents, see [http://www.cdc.gov/breastfeeding/data/nis_data/survey_methods.htm](http://www.cdc.gov/breastfeeding/data/nis_data/survey_methods.htm)
Perinatal Quality Collaboratives

About Perinatal Quality Collaboratives

State 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 through continuous quality improvement. PQC members identify care processes that need to be improved and use the best available methods to make changes and improve outcomes. State PQCs include key leaders in private, public, and academic health care settings with expertise in evidence-based obstetric and neonatal care and quality improvement.

Many states currently have active collaboratives, and others are in development. Visit State Perinatal Quality Collaboratives to view a list of state PQCs.

CDC is currently providing support for state-based PQCs in the following states: California, Illinois, Massachusetts, New York, North Carolina, and Ohio. Funding will enhance the capabilities of PQCs to improve the quality of perinatal care in their states, including efforts to reduce maternal mortality associated with hypertensive disorders of pregnancy, improve care for infants impacted by neonatal abstinence syndrome due to maternal substance abuse, improve the use of progesterone medication for reduction of preterm birth, and improve the accuracy and timeliness of birth certificate data.

National Network of Perinatal Quality Collaboratives Launch

The launch of the National Network of Perinatal Quality Collaboratives (NNPQCN) will be held on November 29 and 30 at Ft. Worth, Texas. The NNPQCN, sponsored by the Centers for Disease Control and Prevention and the March of Dimes, supports the development and enhances the ability of both emerging and established state PQCs to make measurable improvements in maternal and infant health. The goal of the launch is to provide opportunities for the sharing of organizational and functional best practices between PQCs across the country, and to determine the support PQCs need from the national network. To find out more, visit mnpqcn.org/conferences.

Funding for this event was made possible by the Centers for Disease Control and Prevention. The views expressed in written event materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services or the March of Dimes, nor does the mention of trade names, commercial practices or organizations imply endorsement by the March of Dimes or the U.S. Government.

CDC Releases Resource Guide for Perinatal Quality Collaboratives

Developing and Sustaining Perinatal Quality Collaboratives - A Resource Guide for States (PDF - 556KB)
Perinatal Quality Collaborative (PQCs) in the US

CDC is currently providing support for state-based PQCs in the following states:
California, Illinois, Massachusetts, New York, North Carolina, and Ohio.
One issue at a time

1. Healthcare Associated Infection (HAI)
2. Breast milk Nutrition
3. Delivery Room Management
4. Optimizing Length of Separation
5. Antibiotic Stewardship - 18-month initiative; Target start date of June 2016
A Quality Improvement Project to Increase Breast Milk Use in Very Low Birth Weight Infants

OBJECTIVE: To evaluate a multihospital collaborative designed to increase breast milk feeding in premature infants.

METHODS: Eleven NICUs in the California Perinatal Quality of Care Collaborative participated in an Institute for Healthcare Improvement–style collaborative to increase NICU breast milk feeding rates. Multiple interventions were recommended with participating sites implementing a self-selected combination of these interventions. Breast milk feeding rates were compared between baseline (October 2009–September 2009), implementation (October 2009–September 2010), and sustainability periods (October 2010–March 2011). Secondary outcome measures included necrotizing enterocolitis (NEC) rates and lengths of stay. California Perinatal Quality of Care Collaborative hospitals not participating in the project served as a control population.

RESULTS: The breast milk feeding rate in the intervention sites improved from baseline (54.6%) to intervention period (61.7%; P = .005) with sustained improvement over 6 months postintervention (64.0%; P = .003). NEC rates decreased from baseline (7.0%) to intervention period (4.3%; P = .022) to sustainability period (2.4%; P < .0001). Length of stay increased during the intervention but returned to baseline levels in the sustainability period. Control hospitals had higher rates of breast milk feeding at baseline (64.2%) control vs 54.6% participants, P < .0001), but over the course of the implementation (65.7% vs 61.7%, P = .049) and sustainability periods (67.7% vs 64.0%, P = .190), participants improved to similar rates as the control group.
1. Obstetric QI
2. Birth Certificate Accuracy
3. Early Elective Delivery
4. Maternal Hypertension
5. Neonatal QI
6. Golden Hour
7. Neonatal Nutrition
8. Antenatal Corticosteroids
9. Family Engagement
1. Increasing the use of mother's own milk in very low birth weight infants;

2. Increasing safe sleep practices in high risk infants; and

3. Improving the care of infants and families impacted by perinatal substance use and neonatal abstinence syndrome.
NYSPQC Focus Areas

- Obstetrical Improvement Project
  - Reducing scheduled deliveries
- Neonatal Projects
  - Enteral Feeding Improvement Project
  - Central Line Associated Blood Stream Infection (CLABSI) Reduction Project
- Maternal Mortality Initiative
1. **How's Your Baby:**
2. **NC Immunization Registry:**
3. **Catheter Associated Blood Stream Infections (CABSI):**
4. **Eliminating Elective Deliveries Under 39 Weeks Gestation:**
5. **Patient / Family Engagement:**
6. **Human Milk and Breastfeeding: Increasing exclusivity in the hospital:** The exclusive human milk for babies (EHM4B) neonatal health initiative will focus on the use of human milk in hospitals for infant nutrition. Tracks have been designed for Newborn Critical Care Centers (NCCC) to focus on supports and barriers to getting mother’s milk for babies under 1500 grams and/or for maternity care centers to focus on supporting mothers choice to provide exclusive breastfeeding for their term infants.
7. **SIVB: Supporting Intended Vaginal Birth, or "Support for Birth“:**
8. **National CABSI Initiative:**
9. **Human Milk - Well Baby Track:** The exclusive human milk for babies (EHM4B) neonatal health initiative will focus on the use of human milk in hospitals for infant nutrition. The Well Baby track will focus on supporting mothers choice to provide exclusive breastfeeding for their term infants.
10. **Neonatal Abstinence Syndrome**
Breast Milk - Well Baby

Updates

**Human Milk Phase II - Well Baby Track Update: Focus on Breastfeeding Support...**

March 18, 2013 - The focus for teams this month was on Breastfeeding Support. The team from CMC-Pineville team shared how CMC has provided this support not only for their patients but also the community focus they bring to their work through
Read more...

**Human Milk Phase II - Well Baby Track January 2013 Update: Focus on Intent to feed...**

February 17, 2013 - PQCNC has used data that the teams are collecting to produce new reports that highlight the gap between intention to feed and the actual rate of infants who were exclusively breastfed. Teams discussed issues surrounding this Read more...

Results

Over the entire collaborative we increased breastfeeding support by 78%, skin to skin by 33%, reduced pacifier use by 53% and
Learn more...

Resources

- PQCNC/New Hanover: Human Milk Initiative and the Power of Teams
- Breastfeeding: At the Intersection of Public Health and Pediatrics
- "Morgan Paul"
- Human Milk Initiative(s) Resources
Greetings from Ohio

The Buckeye State
* Agency for Healthcare Research and Quality
* Best Evidence for Advancing Childhealth in Ohio Now (BEACON)
* Centers for Disease Control and Prevention
* Centers for Education & Research on Therapeutics (CERTs)
* March of Dimes
* Medicaid Technical Assistance and Policy Program (MedTAPP)
* Ohio Better Birth Outcomes
* Ohio Children's Hospital Association
* Ohio Collaborative to Prevent Infant Mortality (OCPIM)
* Ohio Colleges of Medicine Government Resource Center
* Ohio Department of Health (ODH)
* Ohio Department of Medicaid
* Ohio Hospital Association
OBSTETRICS PROJECTS:
* Progesterone Project
* 39-Weeks Delivery Charter Project (2008)
* 39-Weeks Dissemination & Birth Registry Accuracy Project
* Antenatal Corticosteroids (ANCS) Project

NEONATAL PROJECTS:
* Neonatal Abstinence Syndrome (NAS) Project
* NICU Graduates
* Decreasing Bloodstream Infections Project
* Human Milk Project
**Human Milk KDD**

**Aim**

**SMART AIM**
By June 2013 we will reduce late onset (>72 hrs) blood stream/CSF infections in infants 22-29 weeks gestational age to < 10% in Ohio NICUs

**Key Drivers**

- Maternal education about the benefits (for both mother and infant) of HM
- Care practices that promote adequate supply of human milk
- Administrative/Leader and staff education to promote and support HM
- Optimize feeding practices to promote initial and persistent human milk feeds
- Use of donor milk when mother's milk not available or inadequate in volume

**Practice Changes**

- All pregnant women should be informed of the benefits of human milk
- Antenatal consult (NICU MD and Lactation Consultation) on admission for high risk mothers (admitted for preterm labor or other complications) including
  - Benefit and importance of human milk as first feedings
  - Importance of early pumping for adequate and sustained milk supply
  - Use of donor milk if no maternal milk is available
- Encourage Kangaroo care
- All Mothers should be shown (by LC or trained nursing staff) how to express their milk (both pumping and by hand expression)
- Early initiation of pumping (within 6 hours of delivery)
- Presentation of business case for human milk
- Leadership commitment to communicate project goals (as they relate to the organizational strategic objectives) and support team by removing barriers to achieving them
- Develop unit specific feeding guidelines/policies, to promote initial and persistent human milk feed
- Policies to encourage use of donor milk from a certified milk bank, if MOM NA

For all infants 22-29 weeks GA:
1) HM begun within 72 hrs. in >80%.
2) ≥ 100 ml/kg/day of HM by 21 days of life >95%
- MOM maximized
- DM minimized
- Formula eliminated
About:
With a seed grant from the March of Dimes and the support of partners statewide, the Florida Perinatal Quality Collaborative was established in 2010. FPQC consists of statewide partnerships with perinatal-related organizations, individuals, health professionals, advocates, policymakers, hospitals and payers (FPQC stakeholders).

Charter Members
District XII (Florida) of the American Congress of Obstetricians and Gynecologists
Florida Agency for Health Care Administration
Florida Association of Healthy Start Coalitions, Inc.
Florida Chapter of the American Academy of Pediatrics
Florida Chapter of the March of Dimes
Florida Council of Nurse-Midwives
Florida Department of Health
Florida Hospital Association
Florida Section of the Association of Women’s Health, Obstetric and Neonatal Nurses
Florida Society of Neonatologists
University of Florida College of Medicine
University of South Florida Health
Past Projects:
* The Golden Hour: Delivery Room Management
* Reducing Non-Medically Indicated Deliveries (NMID) <39 Weeks
* Neonatal Catheter Associated Blood Stream Infection (NCABSI)

Current Projects:
* Obstetric Hemorrhage Initiative (OHI)
* Antenatal Corticosteroids Teatment (ACT)
* Hypertension in Pregnancy (HIP)
* Perinatal Indicator System
* Early Elective Deliveries (EED)
* Mother's Own Milk (MOM) in the NICU

Proposed Projects
* Primary Cesarean Reduction Initiative
Mothers Own Milk (MOM) Initiative

* Breast milk is the optimal source of nutrition for babies, especially those under 1,500 grams at birth. Benefits are many. Breast feeding promotes mother-infant bonding, improves mother's health, and reduces length of stay and health care costs.

* However, only 45.7% of very low birth weight infants cared for in Florida NICUs in 2013 received any breast milk through discharge. FPQC proposes an evidence-based statewide NICU quality improvement initiative to determine and remove barriers to human milk use for these at-risk infants.

MOM Initiative: May 2016 - December 2017

* Project Aim:

* Increase the number of very low birth weight infants in Florida's NICUs who receive at least 50% of their feedings as mothers own milk at discharge.
Partnering to Improve Health Care Quality for Mothers and Babies

**Project Aim**

- **Intent**
  - Mother intends to provide MOM

- **Establishing Supply**
  - MOM pumped volume $\geq 500$ ml/day at 7, 14, 28 and/or initial disposition

- **Maintaining Supply**
  - $\geq 50\%$ of feeding volume comprised of MOM at day 7, 14 and/or initial disposition

- **Transition to Breast**
  - Nutritive breastfeeding session within 7 days of initial disposition

**Primary Drivers**

- Documentation of informed decision to provide MOM

**Secondary Drivers**

- Hospital grade pump available at maternal discharge
- Lactation assessment by 24 hours of admit to NICU
- First pumping by infant’s 6th hour of life
- MOM available by DOL 3
- Non-nutritive breastfeeding documented
- Skin to Skin by day of life 10

**Recommended Key Practices**

1. Process to provide maternal education and advocate for mother’s own milk
2. Documentation of informed decision to provide mother’s own milk
3. Standardized process for lactation consultations, and assessment by 24 hours of NICU admission
4. Determination of who is responsible and continuously available to initiate and assist with ongoing pumping
5. Secure sufficient number of pumps and ensure access in-house and at discharge
6. Provide breastfeeding education and measure competencies for all staff
7. Maternal education on hand expression, hands-on pumping, colostrum collection, etc.
8. Ensure appropriate supplies are available to facilitate breastfeeding and provision of breast milk
9. Process to monitor milk supply
10. Standardized guidelines (for skin-to-skin, test weights, non-nutritive breastfeeding, etc.)
Wisconsin Perinatal Quality Collaborative (WisPQC): What We Are Doing

**WisPQC Initiatives (date initiated)**

- Maternal Hypertension (2015)

Hypertension is a common medical disorder in pregnancy in the United States. Preliminary data from PeriData.net show that in Wisconsin, hypertensive disorders affect approximately 22% of pregnancies. These disorders are also leading contributors to neonatal morbidity and mortality, with approximately 15-20% of NICU admissions being associated with maternal hypertension.

The aim of this initiative is to increase the number of providers (defined as hospitals or health systems) who use evidence-based protocols for screening and managing women with hypertension in the antepartum, intrapartum, and postpartum period. WisPQC accomplished this aim through the 2015 Regional Forum Series.

Other links:
- California Toolkit to Transform Maternal Care: Improving Health Care Responses to

“Alone we can do so little; together we can do so much.” Helen Keller
Colorado Perinatal Care Quality Collaborative (CPCQC)

CPCC QI Initiatives

- Champions develop PBPs ✅
- Create a VON State Report ✅
- Collaborate with MOD, CDH, CMS, CHA ✅
- Align hospitals with PBPs ✅
- Create a culture of transparency □

↑ Antenatal steroids
↓ Late Preterm Births
↑ Breast Milk
↓ CLABSI
Ultimate Goal: Improve Pregnancy Outcomes
1) Help guide OB providers via evidence-based practice protocols and decision trees;
2) Identify meaningful quality benchmarks
3) Develop data collection measures
Breastfeeding Friendly Washington

What is Breastfeeding Friendly Washington?

Breastfeeding Friendly Washington (BFWA) is a new initiative encouraging organizations to promote and support breastfeeding through changes in their policies and procedures. The Centers for Disease Control and Prevention recognizes that breastfed babies are at less risk for infections, Sudden Infant Death Syndrome (SIDS), chronic conditions and unhealthy weight.

We want to celebrate and recognize the commitment that organizations are making to ensure our future generations are the healthiest ever. A voluntary recognition program is currently available for hospitals making these changes. We hope to expand this program in the future.
OUR MISSION

The Connecticut Perinatal Quality Collaborative works to promote high quality maternal and newborn care across the continuum of acuity, from the community hospital to the neonatal intensive care environment by:

- Facilitating cooperation among hospitals and health care providers
- Supporting evidence-based newborn care practices
- Sharing educational and training resources
- Gathering data that informs members and other stakeholders

Welcome to the Connecticut Perinatal Quality Collaborative
HI-MOM

Human Infants with Mother's Own Milk (HI-MOM)

Resources:

- General Outline for Developing and Implementing a PDSA Cycle
- Kaiser-Permanente Breastfeeding Toolkit
- Bringing the Excitement Home
- Yale Well Newborn CPQC Quality Improvement Project
Middlesex Hospital

HI-MOM

Connecticut Perinatal Quality Collaborative

Dr. Cliff O’Callahan
Kim Kelly, RNC, IBCLC
Dr. Lauren Melman
Amanda McDonald, RNC
Brianna McNally, APRN, IBCLC
Laura Pittari, APRN
Dr. Stephanie Rosener
Spectrum

* Antepartum group
* NICU/SCN group
* Well nursery group
Primary aims are to:

- increase the *intent* to exclusively use mothers own milk as they are admitted by 15%
- Increase *actual* exclusive breast milk use prior to discharge by 20%

Drivers are:

- Increase amount and quality of direct antepartum *education*
- Increase *availability* of linguistically and culturally appropriate resources and educational materials available during prenatal visits
CPQC HI-MOM Antepartum Group 2015

Outcomes

Increase the **intent** of mothers upon admission to exclusively provide breast milk during the newborn period by 15% over the coming year

Exclusions - none

Primary Drivers

- Improve the quality and availability of educational opportunities for parents during the antepartum time period
- Improve the availability of linguistically and culturally sensitive educational materials in the OB and Fam Med offices

Secondary Drivers

- Obstetric and Family Med prenatal education during specified pre-natal visits e.g. the 32 week visit
- WIC and Nurturing Family education to pregnant mothers
- Interconceptual care education - Peds and Fam Med during well child visit of previous child
- Improvements in pre-natal classes offered at MH

Identify existing educational materials for use or modification for our setting

Nursing and NNS education
Baseline Data:

- collected from 11/10/2015- 4/11/16 and 4/12/16-8/31/16
- # of people surveyed = 432 and 476
- Patients asked: Have you received any structured prenatal breastfeeding education?
- Responses (baseline)
  - Printed materials- 52
  - Community Provider- 11
  - Classroom- 43
  - Multiple Resources- 4
  - None- 322
– Update on strategy
  – Brianna to research exactly what is available in offices
  – Jen to research any pre-existing prenatal breastfeeding info that we may consider for adaption
  – Lauren to work with CT-wide team on choosing materials
  – Cliff to update OB Dept
  – Brainstorm other strategies independent of OBs
Primary aim:
- Increase the percentage of healthy newborns receiving exclusive breast milk feedings during the entire hospitalization by 20% over baseline

Drivers are:
- Inadequate maternal education on benefits
- Inadequate opportunity for early evidence based practices that promote initiation and maintenance of breast milk feeding
- Policies that interfere with exclusive breast milk feeding
Goals:
75% of newborns at or above 37+0 weeks delivered vaginally will have immediate, uninterrupted skin to skin for at least 60 minutes

– Improve parental expectations that immediate skin to skin is the norm since it is best for them and their newborn
CPQC HI-MOM Well Baby Group 2015

Outcomes

75% of newborns at/above 37+0 weeks delivered vaginally will have immediate, uninterrupted skin to skin for at least 60 minutes during the first hour.

Includes both breast and bottle-fed infants.

Exclusions include resuscitation, LGA, SGA, preterm, delivered by C-birth

Primary Drivers

Improve parental expectations that immediate skin to skin is the norm since it is best for them and their newborn

Improve all Labor & Delivery staff education about the benefits of immediate and sustained skin to skin

Secondary Drivers

Obstetric and Family Med prenatal ed
WIC and Nurturing Family ed
Perinatology, high risk, consult ed
Interconceptual care education - Peds and Fam Med

Nursing and NNS education
OB, FM, Peds, Anesthesia ed
Resident ed
Defining process and roles around deliveries

CO'C 12/1/15 v1
Baseline Data
* We did not routinely do skin to skin for very long and did interrupt (~0%)

First Cycle Data:
- 01/15/2016- 4/11/16
- # completed start time and end time = 40 (~15%)
- 58% with >60 minutes STS
- Average of all charts 58.3 minutes

Second Cycle Data:
- 4/12/2016- 8/31/16
- # completed start time and end time = 33 (~9%)
- 61% >60 min STS
- Average of all charts 61 minutes
Next Steps:

- Educate all on STS benefits
- Simplified charting
- Communication around shift change
- Post and follow numbers on a quarterly basis
- Positive deviance...
Primary aim:

- Increase use of exclusively mothers milk prior to discharge by 20% from baseline

Drivers are:

- Inadequate and inconsistent prenatal education
- Inadequate mothers milk available at first feed
- Inadequate breast milk continuation
Goal:
Increase the use of mothers’ own exclusive breast milk during the newborn period (with or without fortification) by 20% over a one year period from baseline
- Improve the availability of mothers own milk for the first feedings (decrease time to first pumping less than 6 hours)
CPQC HI-MOM NICU/SCN Group 2015

Outcomes

Increase the use of mothers own exclusive breast milk during the newborn period (with or without fortification) by 20% over the coming year from baseline.

Exclusions – none from among mothers intending to breastfeed.

Primary Drivers

- Improve the availability of mothers own milk for the first feedings – having pumped human milk available.
- Improve the availability of mothers own milk at the time when medical staff determine feeds can begin – less delay.

Secondary Drivers

- Improving availability of pumps within a couple hours after delivery of a child in the SCN.
- Improving education of physician, NNS, and nursing staff about the need to initiate hand expression and/or pumping early in the post-delivery period.
- Measure time to first pumping.
- Identify existing educational materials for use or modification for our setting.
- Nursing and NNS education.
- Improve lactation support and skin to skin in the SCN.
Baseline Data:
- Majority of mothers had significantly delayed first pumping
- Rare ability to provide human milk as first feeds

First Cycle
- 11/09/2015 - 4/08/16
- # of mother/baby couplets separated due to SCN admission that wanted to breastfeed- 16
- Pumped within 6 hours of delivery – 88%
- Average time of first pumping- 5 hr 29 min

Second Cycle
- 4/9/16-8/31/16
- Dyad separation with intent to Bfeed - 13
- Pumped within 6 hours delivery – 77%
- Ave time to first pump – 5 hr 42 min
Vigilance during changes...

Baby Friendly
Skin To Skin in first hour and during stay

Sudden Unexpected Postnatal Collapse SUPC
400 case reports
Most during STS
30% in first 2 hours life
Death in half and disability in majority survivors

Europe: 2.6 to 74 per 100,000 births


24 hour rooming in and falls
Breastfeeding exclusivity and greater weight loss, jaundice..

Pacifier use delay and risk for SUPC

Unintended Consequences of Current Breastfeeding Initiatives

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Promoting and supporting breastfeeding during the postpartum period has been an important and appropriate priority for maternity units in recent years. The Ten Steps to Successful Breastfeeding of the Baby-Friendly Hospital Initiative have been implemented by an increasing number of hospitals as the standard of care for optimally supporting breastfeeding from birth to hospital discharge. As some or all of these steps are increasingly being promulgated as standard of care by government agencies (e.g., the Centers for Disease Control and Prevention) and by The Joint Commission, it is important to be certain that the basis for the recommendations has been documented in reproducible scientific studies and the benefits of the practices recommended outweigh the risks. Unfortunately, there is now emerging evidence that full compliance with the 10 steps of the initiative may inadvertently be promoting potentially hazardous practices and/or having counterproductive outcomes.

The wording of the 10 steps themselves may not suggest a potential for risk. However, the specific guidelines for Baby-Friendly designation provide cause for concern. For example, to comply with step 4 (help mothers initiate breastfeeding within 1 hour of birth), the guideline states that all mothers should have continuous skin-to-skin contact with their baby immediately after birth until completion of the first feeding and skin-to-skin contact should be encouraged throughout the hospital stay, a time period when direct continuous observation by medical care professionals is not likely to occur. Although a recent Cochrane Review provided evidence for the benefits of skin-to-skin care for healthy, full-term and late preterm infants for the first hour after birth, it also stipulates that mother and baby not be left unattended while skin-to-skin care takes place during this early period.1 Reports of sudden unexpected postnatal collapse (SUPC) in association with the skin-to-skin practice, published over the past several years, have focused attention on the importance of this cause.2 Reports of SUPC include both severe apparent life-threatening events (recently referred to as brief resolved unexplained events) and sudden unexpected death in infancy occurring within the first postnatal week of life.3 A comprehensive review of this issue identified 40 case reports in the literature, mostly occurring during skin-to-skin care, with one-third of the events occurring in the first 2 hours after birth and the remainder in the subsequent week of life.4 The review reported death in all of the cases and persistent disability in the majority of survivors. European rates of SUPC varied from 2.6 to 14 cases per 100,000 births, with higher rates related to the length of the inclusion period and infant care practices related to prone sleeping and co-bedding.5 Furthermore, a recent publication from the American Academy of Pediatrics observed that lawsuits have surfaced in US hospitals attributed to unexplained respiratory arrest in apparently healthy newborns during early skin-to-skin care and cautioned that this practice needs to be balanced with the need to implement safe sleep practices with monitoring of infants during skin-to-skin care unless direct observation takes place.6

While breastfeeding exclusivity (step 6) and 24-hour rooming in (step 7) have demonstrated benefits in the postpartum period, these practices may also engender risk. An overly rigid insistence on these steps in order to comply with Baby-Friendly Hospital Initiative criteria may inadvertently result in a potentially exhausted or sedated postpartum mother being persuaded to feed her infant while she is in bed overnight, when she is not physically able to do so safely. This may result in prone positioning and co-sleeping on a soft warm surface in direct contradiction to the Safe Sleep Recommendations of the National Institutes of Health. In addition, co-sleeping also poses a risk for a newborn falling out of the mother’s bed in the hospital, which can have serious consequences.7 There is also the possibility that unsafe sleep practices modeled in the hospital may continue at home.5

The justification for breastfeeding exclusivity is based on a 1998 World Health Organization review of the evidence for the 10 steps.3 However, that review included evidence that when supplementation was given for a medical indication, there was no adverse effect on the duration of breastfeeding. It also concluded, based on the available evidence, that it was not clear what other supplementation in other circumstances was a matter of breastfeeding difficulty rather than an actual cause of breastfeeding failure. Another issue of concern is the ban on pacifier use (step 9). Compliance requires that mothers be educated repeatedly that pacifiers may interfere with the development of optimal breastfeeding. Because there is strong evidence that pacifiers may have a protective effect against sudden infant death syndrome (SIDS), the American Academy of Pediatrics has suggested avoidance of pacifiers only until breastfeeding is established at approximately 1 to 4 weeks of age.5 Because a substantial number of SUPC events occur during the first week of life, this recommendation to proscribe the use of pacifiers is difficult to defend based on risk. Preventing the unintended serious outcomes from these practices has been made more challenging by the emphasis on breastfeeding exclusivity in the perinatal measures recently promulgated by The Joint Commission. Measure PC-O5 requires documentation of the...
161,471 term healthy infants
Does circumcision increase the rate of feeding problems resulting in supplementation and phototherapy in breast-fed newborns

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Middlesex Hospital, Middletown, CT 1 and Department Pediatrics, CCMC and Univ Connecticut, Hartford, CT 2

Introduction
Neonatal circumcision is a common procedure around the world and is performed on about 55% of newborn male infants in the United States. There is controversy among health care providers regarding the impact of circumcision on newborn alertness and quality of breastfeeding following the procedure. Many contend that circumcised male newborns are more fussy and feed poorly in the 12 hours after the procedure.

Feeding patterns during the first few days of infant life are critical in determining whether infants continue to exclusively breastfeed. In the immediate hospital period, feeding patterns can determine whether infants are supplemented, affecting the Core Measure PD-05, or become jaundiced, leading to increased intervention and length of stay.

Methods
- Single center retrospective cohort study at Middlesex Hospital, a 230-bed independent community hospital in central Connecticut with a Level II nursery; a Baby Friendly Hospital averaging 1,100 deliveries annually. Routine newborn care is provided by hospital-employed and private pediatricians as well as faculty and residents from the hospital’s family medicine residency program.
- Inclusion: All newborn infants born between June 1, 2012 and November 30, 2015 at ≥37 weeks gestation to mothers who intended to exclusively breastfeed. N = 1,109.
- Exclusion: Mother’s choice of formula feed, gestational age < 37 completed weeks, and admission to the Special Care Nursery.
- Maternal and infant demographic and clinical data were abstracted from hospital medical electronic records.
- Analyses were conducted using StatView and SAS version 9.3. All P values were 2-sided, and significance was set at alpha <0.05. The study was approved by the Middlesex Hospital Institutional Review Board.

Results
- There was no difference in the rate of supplementation among breastfed male infants who were circumcised compared to those not circumcised.
- There was no difference between male infants, circumcised or not, with respect to highest level of bilirubin measured, rate of phototherapy, or length of stay.

Discussion
No significant differences were observed in circumcision status by maternal opioid or delivery mode status, as expected.
Supplementation, in multivariate analysis, was more likely if non-white maternal race (1.65 times), epidural analgesia (1.75 times), and caesarean delivery (2.19 times).
Circumcision, in multivariate analysis, was highly correlated with white race, maternal age >30 yrs, and having a private pediatrician.

Conclusions
Contrary to common belief among L&D staff, circumcision did not affect breastfeeding enough to affect supplementation rates, bilirubin levels, need for phototherapy, or length of stay.
Circumcision was more commonly performed on children of white, slightly younger mothers who will use a private pediatrician.
Supplementation of breastfed males is more likely if their mother was non-white, had an epidural, or delivered by caesarean.

Appendix 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Circumcision: Yes</th>
<th>Circumcision: No</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant’s age</td>
<td>7.94 (5.83, 9.85)</td>
<td>7.52 (5.58, 9.38)</td>
<td>0.022</td>
</tr>
<tr>
<td>Neonatal age</td>
<td>7.94 (5.83, 9.85)</td>
<td>7.52 (5.58, 9.38)</td>
<td>0.022</td>
</tr>
<tr>
<td>Maternal Race</td>
<td>0.01 (0.00, 0.02)</td>
<td>0.00 (0.00, 0.01)</td>
<td>0.000</td>
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<tr>
<td>Maternal Height</td>
<td>6.62 (4.88, 9.36)</td>
<td>6.62 (4.88, 9.36)</td>
<td>0.880</td>
</tr>
<tr>
<td>Circumcision</td>
<td>1.71 (1.19, 2.44)</td>
<td>1.71 (1.19, 2.44)</td>
<td>0.114</td>
</tr>
<tr>
<td>Phototherapy</td>
<td>0.00 (0.00, 0.00)</td>
<td>0.00 (0.00, 0.00)</td>
<td>0.000</td>
</tr>
<tr>
<td>Phototherapy status</td>
<td>1.71 (1.19, 2.44)</td>
<td>1.71 (1.19, 2.44)</td>
<td>0.114</td>
</tr>
<tr>
<td>Phototherapy delivery</td>
<td>0.00 (0.00, 0.00)</td>
<td>0.00 (0.00, 0.00)</td>
<td>0.000</td>
</tr>
<tr>
<td>Phototherapy length</td>
<td>0.00 (0.00, 0.00)</td>
<td>0.00 (0.00, 0.00)</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Note: “+” indicates statistical significance.
Human Resources for Health
...the silver bullet to under-resourcing in the Health Sector

ECONOMIC GROWTH & HEALTH SYSTEM SUSTAINABILITY
Quality Improvement Program
“Excellent Charting”
by physicians and nurses

Objective: improve vital sign documentation in order to be able to assess a neonate’s progress and improve decision making.

Measurement: At least 3 measures per 24 hours for heart rate, respiratory rate, temperature, and saturations in the past 48 hours.

<table>
<thead>
<tr>
<th>Dates</th>
<th>% complete vitals in past 48 hours</th>
<th>Number of chart</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 4 2013</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>Feb 11 2013</td>
<td>29</td>
<td>17</td>
</tr>
<tr>
<td>Feb 26 2013</td>
<td>92 or 67</td>
<td>13 or 24 w bercu</td>
</tr>
<tr>
<td>March 11, 2013</td>
<td>93 or 90</td>
<td>14 or 20 w bercu</td>
</tr>
<tr>
<td>April 23, 2013</td>
<td>50 or 65</td>
<td>12 or 17 w bercu</td>
</tr>
<tr>
<td>May 21, 2013</td>
<td>66</td>
<td>22 or 29</td>
</tr>
<tr>
<td>June 18, 2013</td>
<td>68</td>
<td>10 or 22</td>
</tr>
</tbody>
</table>

Objective: improve documentation of complete growth plotting in order to assess adequate nutritional care of our neonates.

Measurement: plotting of weight, length, and head circumference within the past 7 days

<table>
<thead>
<tr>
<th>Dates</th>
<th>Growth plotted in past 7 days</th>
<th>Number charts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 4 2013</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>Feb 11 2013</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td>Feb 26 2013</td>
<td>54 or 46</td>
<td>13 or 24 w bercu</td>
</tr>
<tr>
<td>March 11, 2013</td>
<td>73 or 70</td>
<td>15 or 23</td>
</tr>
<tr>
<td>April 23, 2013</td>
<td>67 or 47</td>
<td>12 or 17 w bercu</td>
</tr>
<tr>
<td>May 21, 2013</td>
<td>52</td>
<td>29</td>
</tr>
<tr>
<td>June 18, 2013</td>
<td>64</td>
<td>22</td>
</tr>
</tbody>
</table>
Objective: improve the clear communication between physicians and nurses by using the Medication Prescription Chart in the file for all medicines ordered.

Measurement: use of the communication chart for admission and most recent orders.

<table>
<thead>
<tr>
<th>Dates</th>
<th>Physician using proper order sheet for meds</th>
<th>Number charts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 5 2013</td>
<td>83</td>
<td>6</td>
</tr>
<tr>
<td>Feb 11 2013</td>
<td>65</td>
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<td>46 or 46</td>
<td>13 or 24 w berseau</td>
</tr>
<tr>
<td>March 11 2013</td>
<td>60 or 65</td>
<td>15 or 23</td>
</tr>
<tr>
<td>April 23, 2013</td>
<td>42 or 53</td>
<td>12 or 17 w berseau</td>
</tr>
<tr>
<td>May 21 2013</td>
<td>52</td>
<td>29</td>
</tr>
<tr>
<td>June 18, 2013</td>
<td>32</td>
<td>22</td>
</tr>
</tbody>
</table>
Blood Culture Technique – excellence at work

Have we prepared the skin well?
Alcohol and then iodine for >30 sec.
Have we let it dry?
Did we clean the bottle membrane with iodine or alcohol?
Did we let it dry?
Clean needle?

Did we wash out hands well before putting on gloves?
Are we wearing gloves? Did we avoid re-palpating?
Did we do the blood culture first before other lab tests?
Did we label the bottle and fill the form completely?
Conclusions

* Quality Improvement is really just doing better care
* It can be big and complicated
* It can be done anywhere
* Small steps
* Be open to learning and change

* Do good work!!!!