

Welcome!

- Please set up your storyboard by topic (Golden Hour or NAS)
- If you have team members here, please try to sit together



ILPQC Neonatal Teams Golden Hour Initiative Face to Face with NAS Planning

May 22, 2017

11:00 am – 3:00 pm

ILPQC Mission

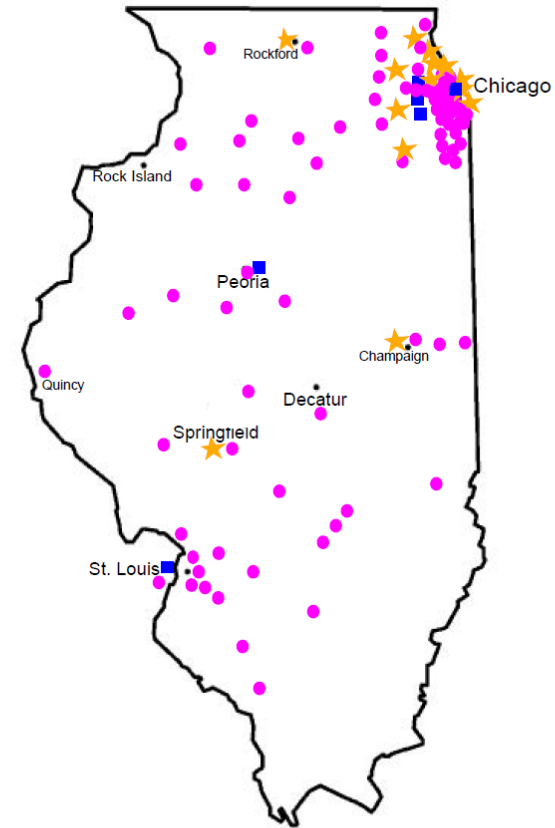


A statewide perinatal quality collaborative that engages perinatal stakeholders across disciplines and at every level, in a collaborative effort to improve the quality of perinatal care and health outcomes for Illinois women and infants using improvement science, education, and evidence-based practice guidelines. ILPQC builds on Illinois' existing state-mandated Regionalized Perinatal System and operates with long-term sustainable funding.



ILPQC: Working with Hospitals Across the State

- 112/120 Illinois birthing hospitals participating in one or more ILPQC Initiative
- 110 hospitals participate in an OB Initiative
- 26 hospitals participate in a Neonatal Initiative
- 95% of IL births covered by ILPQC
- 91% of IL NICU beds covered by ILPQC



Today's Participants

- 77 participants registered
- 30 hospital teams represented
- Roll call: physicians, nurses, quality, public health
- Materials check:
 - Agenda
 - Storyboard List
 - Golden Hour Award Criteria Sheet (to be awarded at annual conference)

Agenda



- 11:00 am – 11:20 am Goals for Today and Progress to Date on Golden Hour Initiative
- 11:20 am – 12:05 pm Golden Hour Strategies and Demonstrations from IL Hospitals
- 12:05 pm – 12:50 pm Lunch and Team Storyboard Session
- 12:50 pm – 1:20 pm Strategies for Patient and Family Engagement in Golden Hour
- 1:20 – 1:50 pm Small Group Breakout Sessions on Implementation Strategies
- 1:50 – 2:05 pm Debrief Small Group Key Topic Discussions on Implementation Strategies
- 2:05 – 2:40 pm NAS Initiative Workgroup Timeline & Action Items
- 2:40-- 3:00 pm Summary and Evaluation

Goals for Today & Progress to Date on Golden Hour Initiative

Opportunity: ILPQC Neonatal Co-Lead



Works with Dr. Leslie Caldarelli to help lead and supervise the development, implementation, and sustainability planning of neonatal quality improvement projects including current and future QI initiatives. Activities include:

- Planning and implementing core collaborative learning, rapid response data, and quality improvement support for initiatives
- Co-facilitation of the ILPQC NAS workgroup, which will develop QI aims, measures, and resources, as well as the content of a REDCap Data Form and web based quality improvement reports
- Planning and participation in monthly Neonatal Teams Calls (2nd Tuesday from 2-3), Neonatal Advisory Calls (1st Monday from 1-2), annual Neonatal Teams Face-to-face (May) and Conference (Nov)
- Monitoring progress towards statewide QI goals

Opportunity: ILPQC Neonatal Co-Lead



- Ideally located outside of Chicago with strong interest/expertise in NAS
- Interested candidates should email info@ilpqc.org with:
 - Resume/CV
 - Brief statement of interest in the position
- Applications will be reviewed starting June 1

The overall goal of the Golden Hour project is to improve the outcomes of neonatal resuscitation and care in the first hour of life in newborn infants.

Delivery Room Practices

- 80% of infants not needing resuscitation at birth will receive delayed cord clamping in the delivery room.
- 80% of newborns requiring resuscitation will have a pulse oximeter placed by two minutes of life.
- 80% of eligible neonates will be initially stabilized with non-invasive respiratory support in the delivery room.
- 80% of eligible neonates will receive pulmonary surfactant within 15 minutes of intubation.

NICU Admission Practices

- 90% of infants less than 32 weeks gestation or less than 1500 grams will have a temperature between 36.5-37.5°C upon admission to the NICU.
- 80% of all infants less than 32 weeks gestation or less than 1500 grams will have intravenous access, intravenous fluids, and antibiotics infusing within one hour of admission to the NICU.

Team Communication Practices

- 80% of high-risk deliveries will use a checklist which includes a pre-briefing with the OB and nursery team and a post-resuscitation debriefing.

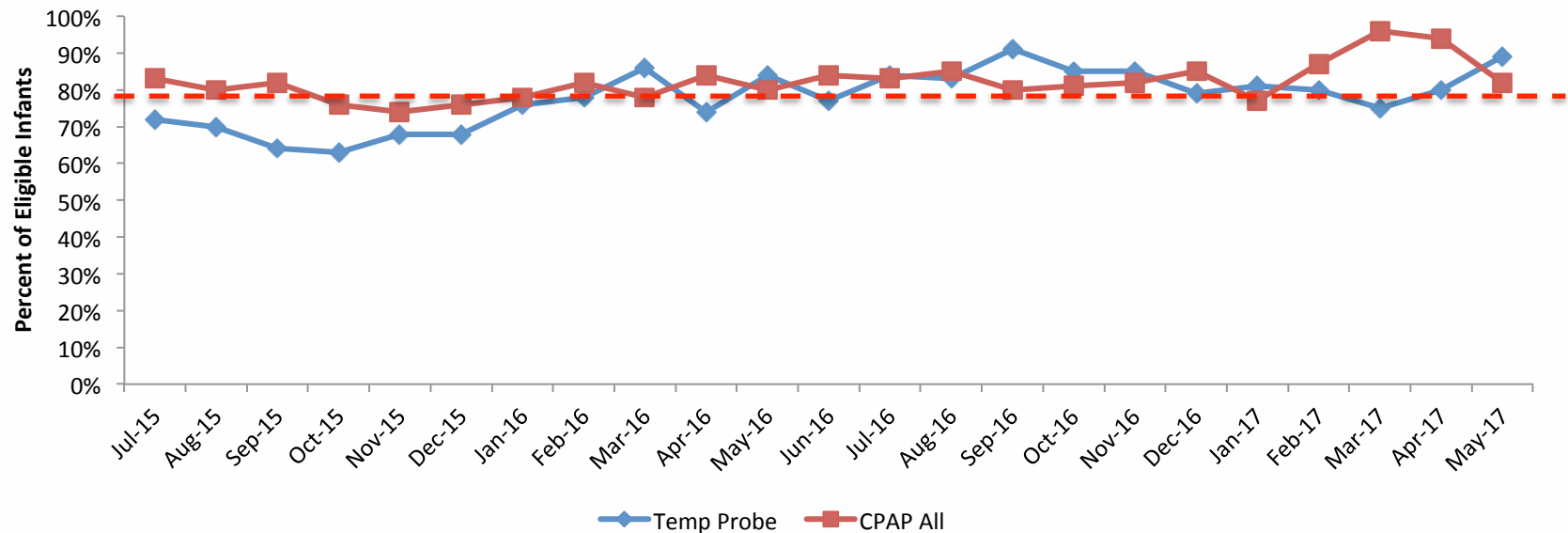
Family Engagement Practices

- 90% of resuscitation team leaders will have introduced themselves to the mother and/ or significant other prior to delivery.
- 90% of fathers/significant others will have experienced partnership at the baby's bedside in the delivery room, transport to NICU/ SCN, and during the admission process.

Golden Hour Progress on Process Measures

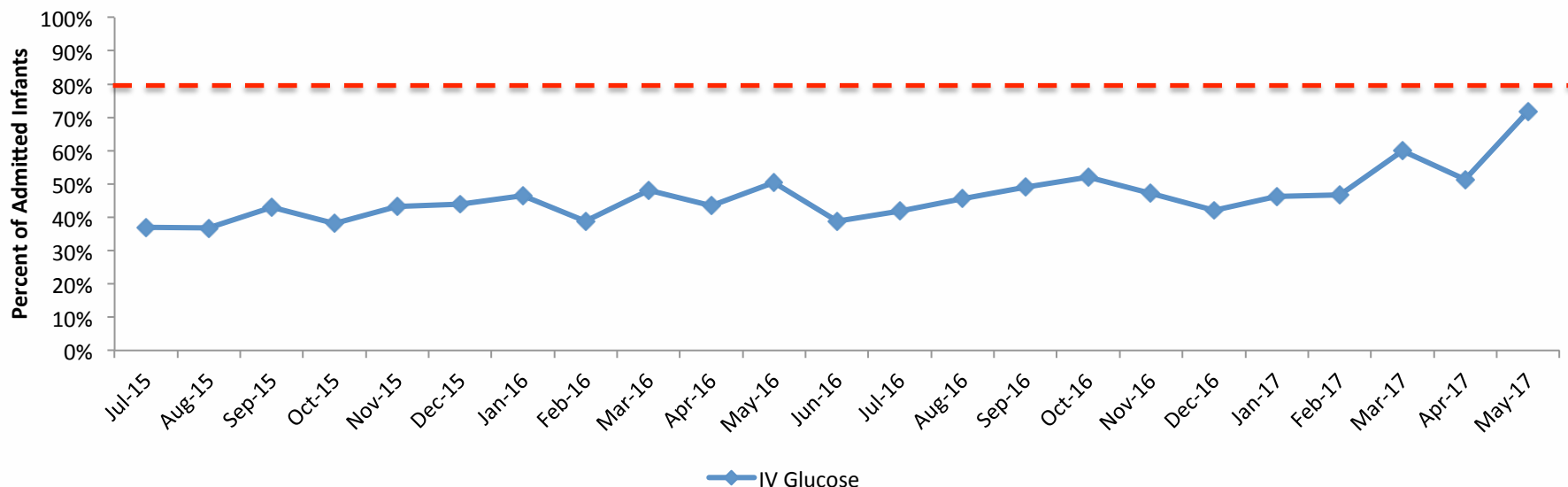
Neonatal Golden Hour: Delivery Room Practices- Temp Probe & CPAP

ILPQC: Golden Hour Initiative
Delivery Room Practices: Percent of Eligible Infants with Temp Probe
Initiated within 10 minutes, Initially Stabilized with CPAP Trial
All Hospitals, 2015-2017



Neonatal Golden Hour: Admission Practices –IV Glucose

ILPQC: Golden Hour Initiative
Admission Practices: Percent of Admitted Infants who Received IV
Glucose within
1 Hour of NICU/Specialty Care Nursery Admission
All Hospitals, 2015 - 2017



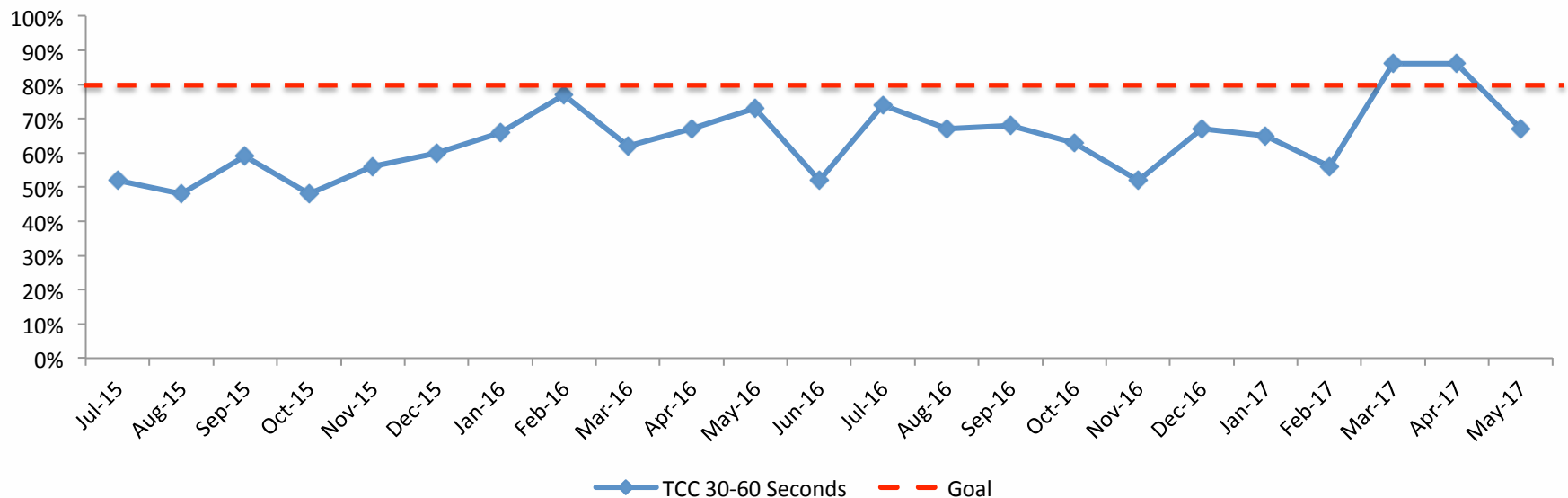
Golden Hour: Remainder of 2017

- Delayed cord clamping (80% or greater)
- Temperature of infants upon NICU admission at 36.5-37.5°C (90% or greater)
- All team communications measures (80% or greater)
 - Pre-brief
 - Checklist
 - Debrief
- All family engagement measures (90% or greater)
 - Pre-resuscitation
 - During resuscitation
 - At NICU admission

Neonatal Golden Hour: Deliver Room Practices- Delayed Cord Clamping

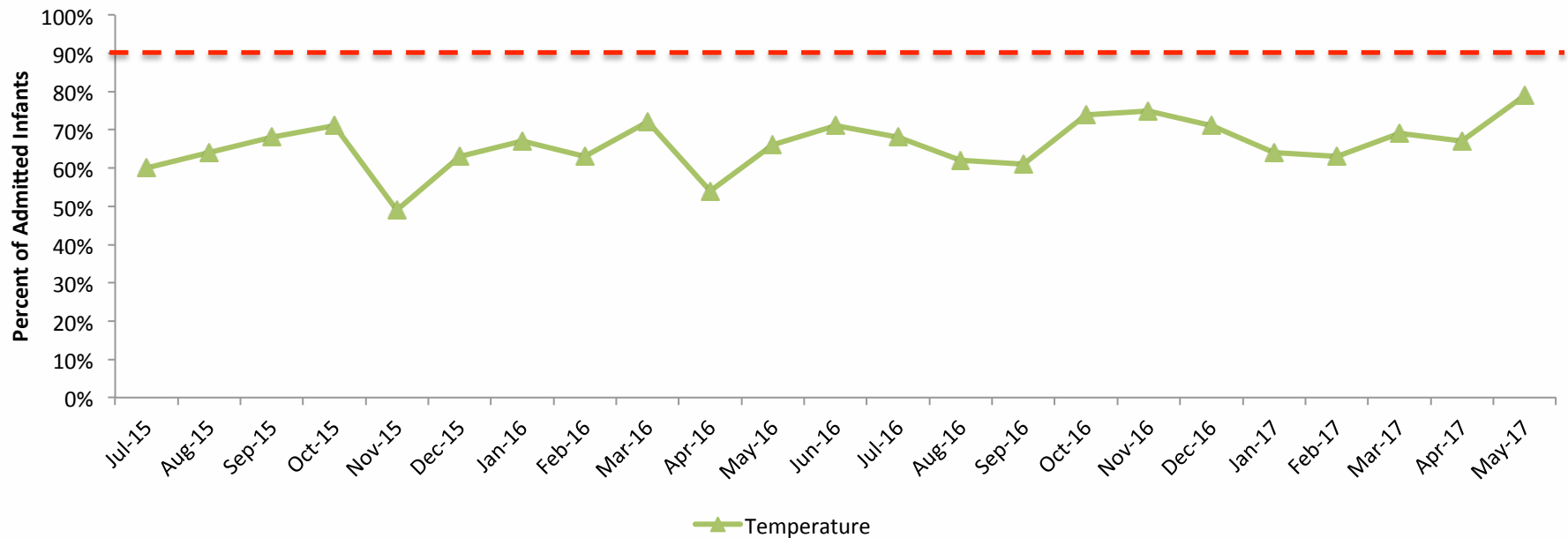
ILPQC: Golden Hour Initiative

**Percent of Eligible Infants with Delayed Cord Clamping between 30-60
Seconds
All Hospitals, 2015 - 2017**



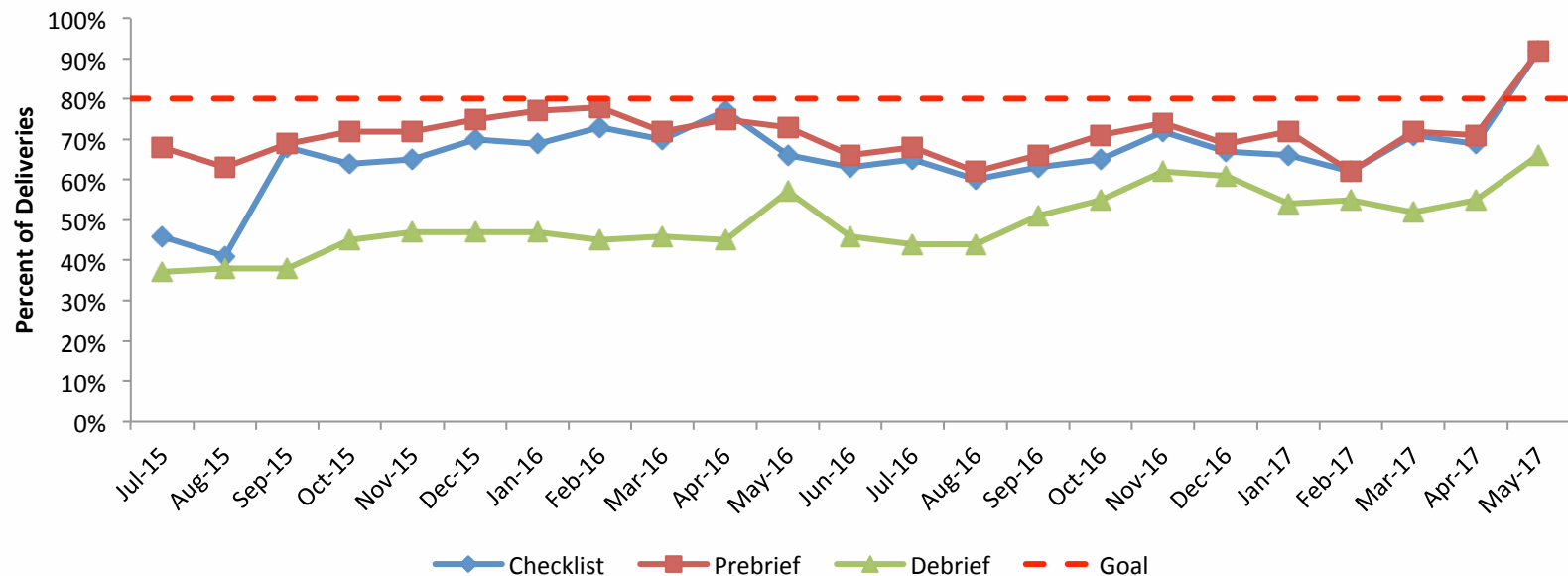
Neonatal Golden Hour: Admission Practices – Temperature

ILPQC: Golden Hour Initiative Admission Practices: Percent of Admitted Infants who are Between 36.5-37.5°C on NICU Admission (<32 weeks) All Hospitals, 2015 - 2017



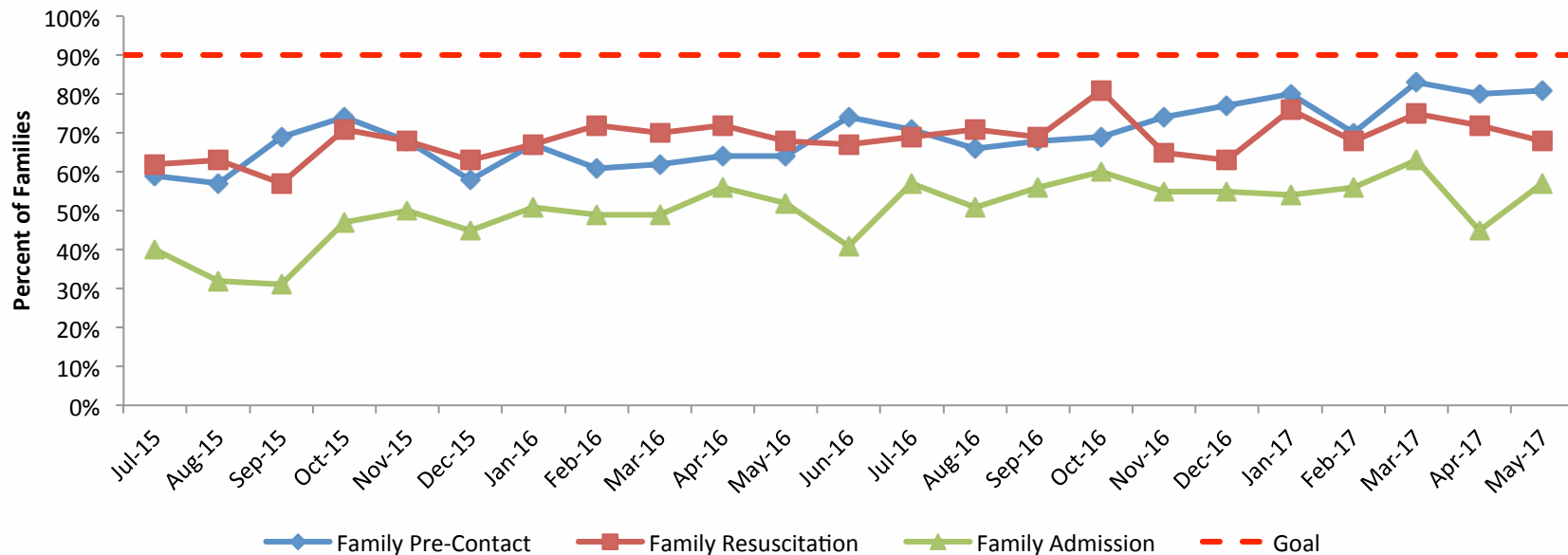
Neonatal Golden Hour: Communication Practices

ILPQC: Golden Hour Initiative Communication Practices: Percent of Deliveries Utilizing Delivery Room Checklist, Prebrief, & Debrief All Hospitals, 2015-2017



Neonatal Golden Hour: Family Engagement

ILPQC: Golden Hour Initiative Family Practices: Percent of Families Receiving Pre-Contact, Present During Admission, and Present During Resuscitation All Hospitals, 2015-2017



Announcing the Golden Hour Achievement Awards

To be awarded at the ILPQC
Annual Conference in
November 2017

Golden Hour Strategies & Demonstrations from IL Hospitals

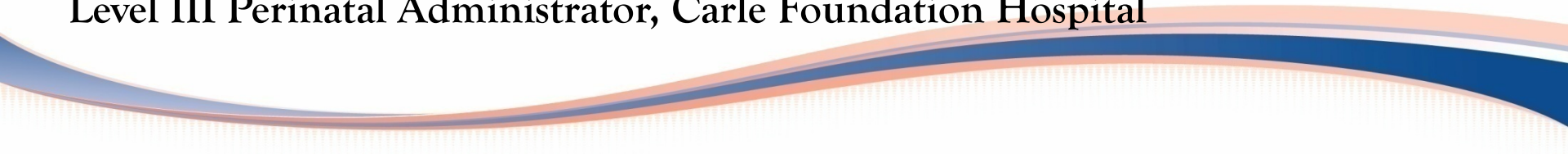
Facilitator: Leslie Caldarelli, MD

Panelists:

Justin Josephsen, MD – Delayed Cord Clamp
Neonatologist, SSM Health Cardinal Glennon Children's Hospital

Rhonda Gale, MSN, RNC-NIC – Temperature at NICU Admission
NICU Educator, MercyHealth

Jenny Brandenburg, RN, MSN and Lisa Davis, NNP - Debriefs
Level III Perinatal Administrator, Carle Foundation Hospital



Implementation of Delayed Cord Clamping

Justin Josephsen, MD

Assistant Professor of Pediatrics, Division of Neonatology

Saint Louis University

ILPQC Neonatal Face-to-Face

May 22, 2017

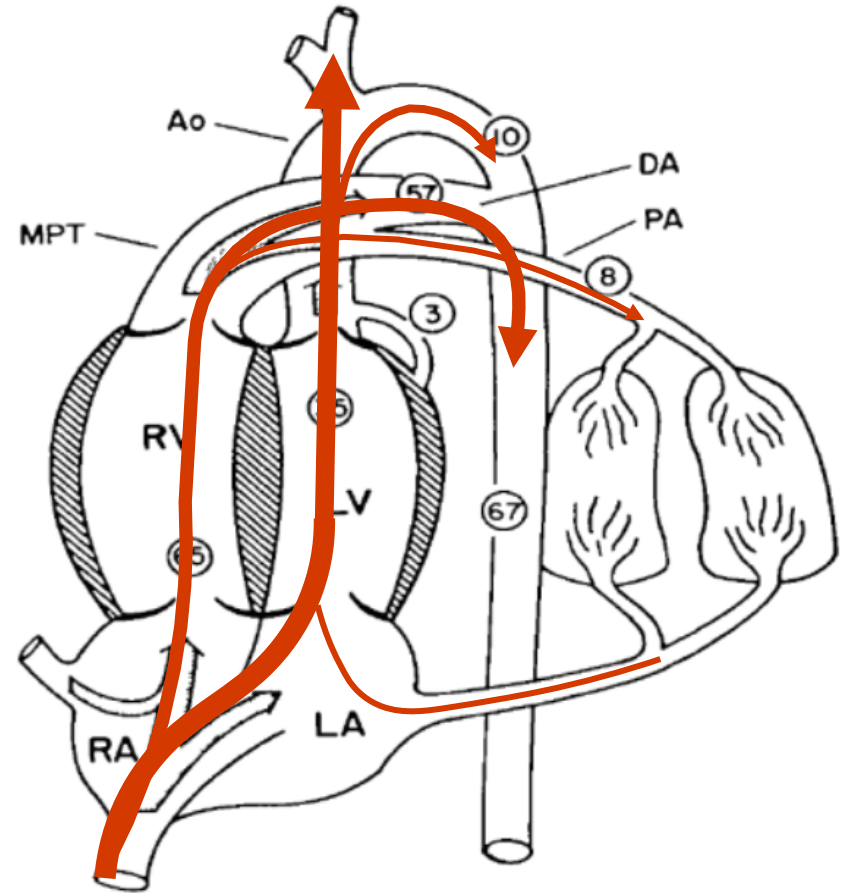
Disclosures/Funding

- I have no conflicts of interest to disclose

Neonatal Cardiopulmonary Transition

Fetal Circulation: two 2-chambered systems in parallel; favors adequate O₂ delivery to the brain

- **Oxygenated blood in the umbilical vein preferentially enters the left side (via the foramen ovale to LA, LV, and to aorta), with 90% going to the brain, 10% to the descending aorta**
- **Only about 8% of the RV output goes to the non-ventilating lungs**
- **A large fraction is shunted through the PDA to the descending aorta**
- **Very little blood returns from the lungs to the LA**



When all goes well...

- Infant cries on obstetrician's hands **1**
- Someone shouts "time of birth"
- The cord is clamped and cut **2** and the baby handed to the pediatric team
- Basic stabilization is done with the mother or under the warmer, Apgar scores given



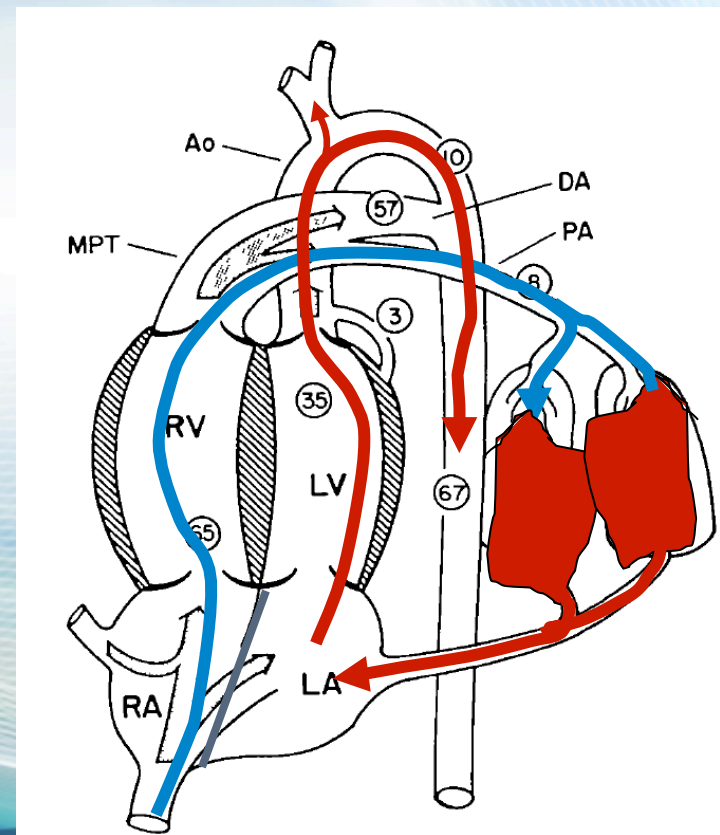
Circulation changes to a 4-chambered circuit in series

1

- Infant cries → FRC ↑ → PVR ↓
RV output to the lungs ↑
- Oxygenated blood returns to the LA, ↑ LA pressure, foramen ovale closes
- Increasing LV filling increases LV output
- Lung perfusion continues to increase & PDA flow ↓

2

- Cord is tied
- Everything proceeds nicely



What happens when a fetus is compromised, does not breathe/cry at delivery, and the first action is to clamp the cord?

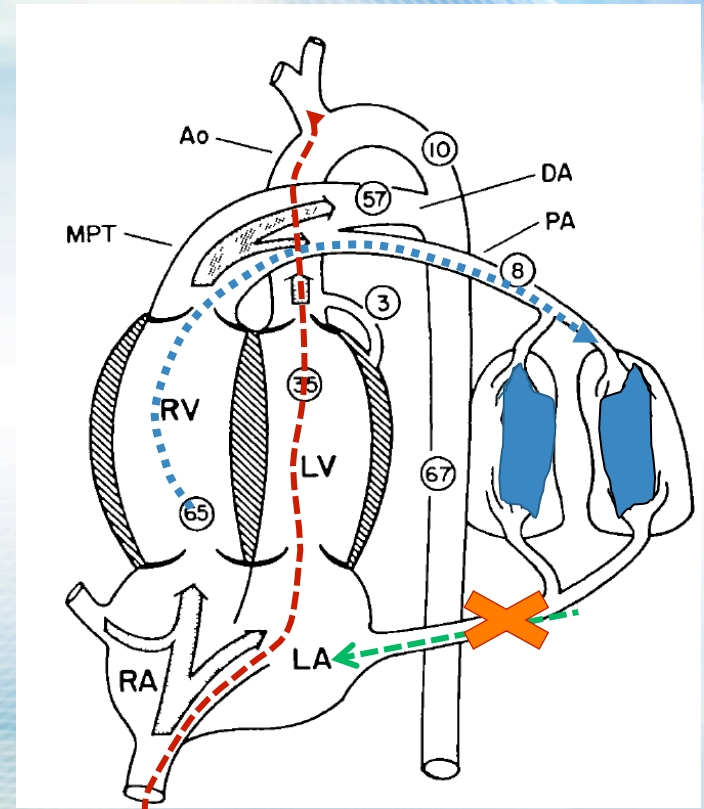
- **Cord clamped; infant is handed to the resuscitation team; resuscitation steps started**
- **Bag and mask ventilation not effective: infant blue**
- **Trachea is intubated**
- **Pulse <50; infant remains pale/gray/blue**
- **Someone says, she's hypovolemic, give 10 ml saline!**



Meanwhile, behind scenes...

Immediate cord clamping → simultaneous decrease in preload and increase in afterload

- **Right ventricle (RV) filling volume drops due to the cessation of umbilical venous blood flow (oxygenated blood) from the placenta**
- **No lung expansion---no pulmonary perfusion ---and no pulmonary venous return to the left atrium, and to LV.**
- **40%-50% of the expected drop in RV output to LA**
- **Increase in LV after-load (clamped UA)**
- **All these are risk factors for a drop in LV output**



All due to clamping of cord before establishing ventilation!

Endorsed by the American Academy of Pediatrics



The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

COMMITTEE OPINION

Number 684 • January 2017

(Replaces Committee Opinion Number 543, December 2012)

Committee on Obstetric Practice

The American Academy of Pediatrics and the American College of Nurse-Midwives endorse this document. This Committee Opinion was developed by the American College of Obstetricians and Gynecologists' Committee on Obstetric Practice in collaboration with committee members Maria A. Mascola, MD; T. Flint Porter, MD; and Tamara Tin-May Chao, MD.

This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed.

Delayed Umbilical Cord Clamping After Birth

ACOG Conclusions

“ In term Infants. . .

- “. . .delayed umbilical cord clamping increases hemoglobin at birth and improves iron stores in the first several months of life, which may have a favorable effect on developmental outcomes.”

ACOG Conclusions Preterm Infants

- “Delayed umbilical cord clamping is associated with significant neonatal benefits in preterm infants, including improved transitional circulation, better establishment of red blood cell volume, decreased need for blood transfusion, and lower incidence of necrotizing enterocolitis and intraventricular hemorrhage.”

Summary from ACOG Abstract

- “Given the benefits to most newborns and concordant with other professional organizations, the American College of Obstetricians and Gynecologists now recommends a delay in umbilical cord clamping in vigorous term and preterm infants for at least 30-60 seconds after birth.”
- “The ability to provide delayed cord umbilical cord clamping may vary among institutions and settings; decisions in these circumstances are best made by the team caring for the mother-infant dyad.”

Neonatal Resuscitation Program (NRP) 7th Edition

- “Current evidence suggests that cord clamping should be delayed for at least 30 to 60 seconds for most vigorous term and preterm newborns. If placental circulation is not intact, such as after a placental abruption, bleeding placenta previa, bleeding vasa previa, or cord avulsion, the cord should be clamped immediately after birth. There is insufficient evidence to recommend an approach to cord clamping for newborns who require resuscitation at birth.”

DCC Hospital Guidelines

Cord Clamping at St. Mary's

The Future?



NICU Admission Temperatures: Sustaining the Gains?

Mercyhealth Hospital-Rockton Ave.

(formerly Rockford Memorial Hospital)

Rhonda Gale, MSN, RNC-NIC

ILPQC – Neonatal Face to Face

May 22, 2017

PDSA Cycles

- Small tests of change
 - Increased temp of transport incubator
 - Increased temp of OR
 - Type of hat
 - Switched to a new type of plastic wrap
 - Chemical mattress
 - Take temp in the DR



Golden Hour Audit Tool for Inborn Admissions Less than 32 weeks

Patient Sticker _____

Was there a pre-delivery briefing? Yes No/why not? _____

Gestational Age _____ Time of birth _____ C-Section or Vaginal

Admission Wt _____ Apgar: 1 minute: _____ 5 minutes: _____

Race: White Black Hispanic Asian Other: _____

Resuscitation: PPV CPAP Intubation Compressions

If babe intubated, was a trial of CPAP done? Yes no Timed Cord Clamping? Yes No

Infant's temp in the delivery room: _____ F Admission Temp: _____ F (goal 97.7-99.5F)

Did you use the temp probe? Yes No/why not? _____

Did you grab warmed blankets/sterile blanket/hat right before the delivery so they are warm? Yes No

Did you use the NeoHelp (Raincoat) with a knitted hat: yes no/why not? _____

Did you use a chemical mattress? Yes No (no longer need to bring k-pad with to NICU)

Admission blood glucose _____

Was a D10 bolus given? Yes No

Time IV access was obtained: _____

If umbilical lines were placed who put them in? Transport NNP MD

Time x-ray was called _____ Time X-ray done: _____

Time IV fluids were started _____

Time of antibiotic initiation _____

Was there a Post-delivery briefing Yes No/why not? _____

Family/Significant other present on admission to the NICU? Yes No

First gas obtained by one hour of age? Yes No Results _____

Place completed form in the folder at the desk

Admission Temperature Goal: 97.7 to 99.5F

Infants 32+1 weeks to 37 weeks:

K-Pad on at 107F

1 knitted hat

Heat Lamp

Check temp before leaving DR. Make adjustments PRN.

Infants 27 weeks to 32 weeks:

K-Pad on at 107F

Use the NeoHelp (rain coat)

1 knitted hat

Heat Lamp

Check temp before leaving DR.

If cool, place on chemical mattress with blanket in between to bring to NICU in pre-warmed isolette.

Infants <27 weeks:

Use the NeoHelp (rain coat)

1 knitted hat

Heat Lamp

Chemical mattress with blanket in between.

Check temp before leaving DR. Make adjustments PRN.

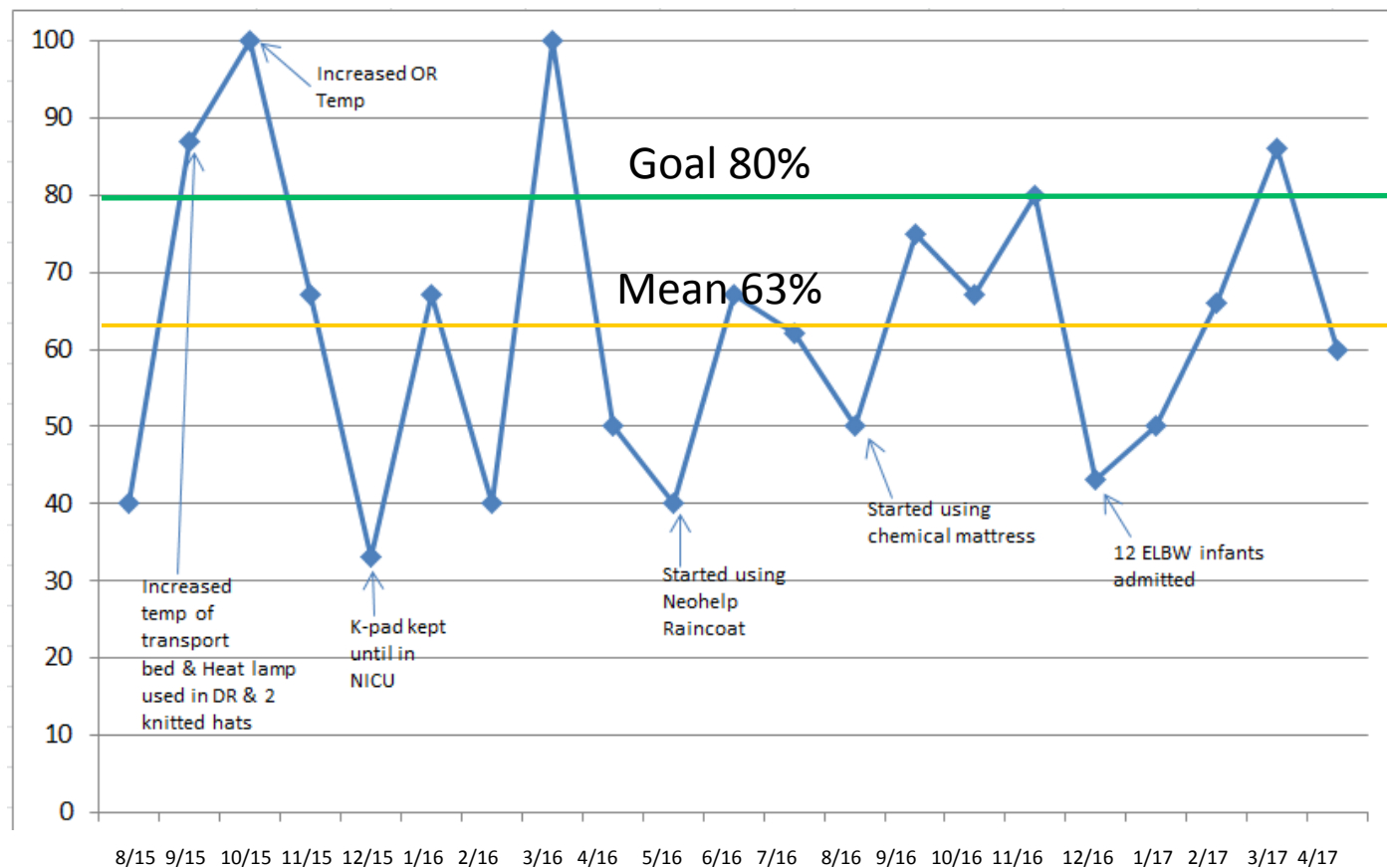
Transport to NICU in pre-warmed isolette.

Next Steps

- Temp probe
- Warmed humidified gases
- Folding blanket in 4's for chemical mattress to avoid hyperthermia



Percent of Time Admission Temperature in Target



But how can we SUSTAIN the GAINS??

- Monitor the data monthly
- Communicate often
- Try to hold each other accountable
- Incorporated the practice changes into SIMS
- Continued to share the why

Evidence

- Use available toolkits such as those by:



Sustaining Improved Outcomes Toolkit

(Thomas & Zahn, 2010)

- “Move the practice from constant oversight to common practice”
 - New ways of working
 - Improved Outcomes
 - Becomes the norm

The 12 factors to choose from:

- Ask these 2 questions first:
 - How important is this factor to your improvement project?
 - To what degree do you feel that this factor will influence the project?
- Best to only choose a few



12 Factors:

1. Perceived Value
2. Monitoring & Feedback
3. Leadership
4. Staff
5. Shared Models
6. Organizational Infrastructure
7. Organizational Fit
8. Community Fit
9. Partners
10. Spread
11. Funding
12. Policies

SUSTAINABILITY FACTOR	WHY THE FACTOR IS IMPORTANT TO SUSTAINABILITY	ACTIVITIES TO STRENGTHEN THE FACTOR Describe activities that will strengthen this factor
PERCEIVED VALUE to the: <ul style="list-style-type: none"> community • clients/patients • staff • leaders • 		
MONITORING AND FEEDBACK to the: <ul style="list-style-type: none"> community • clients/patients • staff • leaders • 		
LEADERSHIP <ul style="list-style-type: none"> executives • managers • champions • 		
STAFF <ul style="list-style-type: none"> frontline • administrative • volunteers • 		

Celebrate your successes



References

Thomas & Zahn (2010). Sustaining Improved Outcomes: A toolkit. Retrieved from http://www.sustainingoutcomes.com/?page_id=31

Questions?





Tips of an Effective Debrief:

- Determine what works best for your facility
- Consistency by ensuring debriefing occurs every time (Good and Bad)
- Establish ground rules/safe place (No blame)
- Ensure everyone speaks and stays engaged
- Provide facilitator training
- Discuss clinical situation and outcome
- What went well
- Areas of Improvement
- Any actions to take in the future
- Summarize



Scenario

- **25 week GA, urgent C/S for abruption**
 - High risk team to OR (MD, NNP, RN, RRT)
 - Depressed at birth, required intubation



Video of Role-Play by Carle Hospital Team Members

Lunch and Team Storyboard Sharing

- Share your team's story from 12:05 – 12:50 pm
- Engage in conversations to learn from other teams
 - Ideas for change
 - Opportunities for improvement
 - Strengths
 - Barriers and challenges
 - Sustainability
 - Support



Family Engagement in the Golden Hour

Terry Griffin, MS, APN, NNP-BC
St. Alexius Medical Center

Learning Outcomes

- ▶ Review recommendations for engaging family in Golden Hour and how they can be achieved
- ▶ Identify challenges to partnering with families of newborns
- ▶ Consider strategies for addressing these challenges



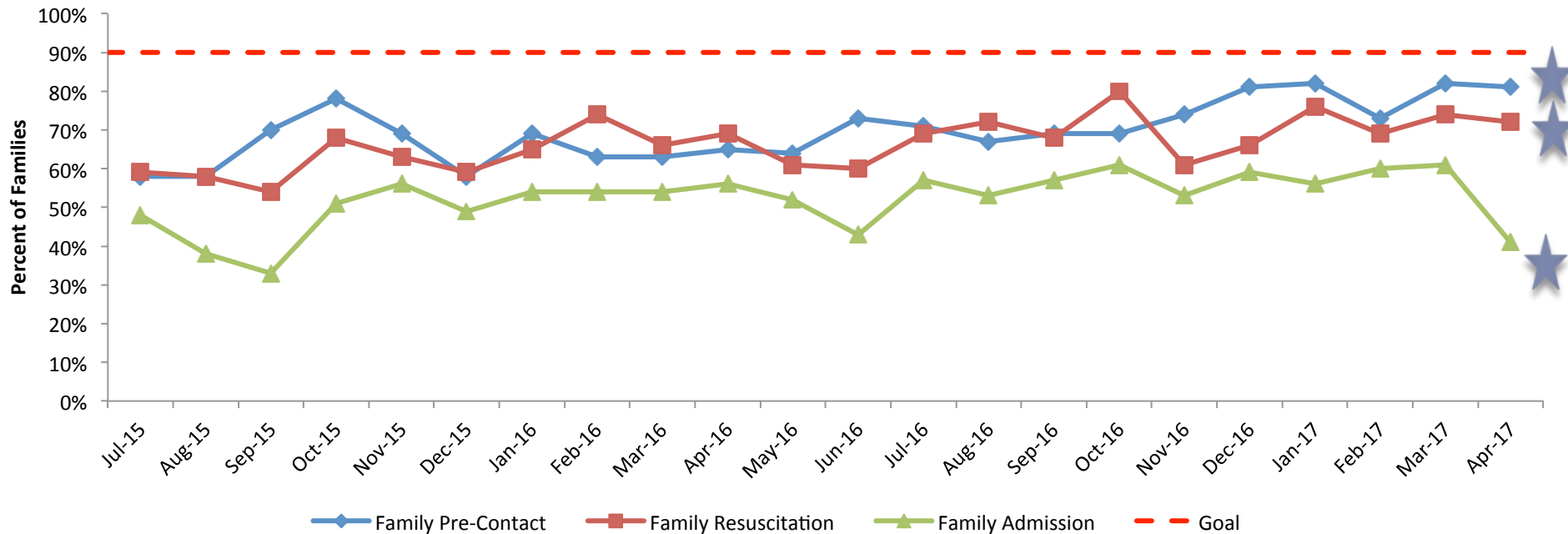
Family Engagement Recommendations

- ▶ Introduction of staff
 - ▶ Pre delivery
- ▶ Welcoming father/significant other to radiant warmer
- ▶ Welcoming father/significant other to the NICU during the admission



Neonatal Golden Hour: Family Engagement

ILPQC: Golden Hour Initiative Family Practices: Percent of Families Receiving Pre-Contact, Present During Admission, and Present During Resuscitation All Hospitals, 2015-2017



Challenges

- ▶ Education
- ▶ Experience
- ▶ Practice/policies
- ▶ Communication



Education

- ▶ Technical focus
 - ▶ Clinical competence and technical expertise
 - ☐ assessment
 - ☐ diagnosis
 - ☐ interventions

















OLD ME

- ▶ **Mother's role:**
 - ▶ Good prenatal care
 - ▶ Take care of self and unborn child
 - ▶ Be a good parent AFTER discharge

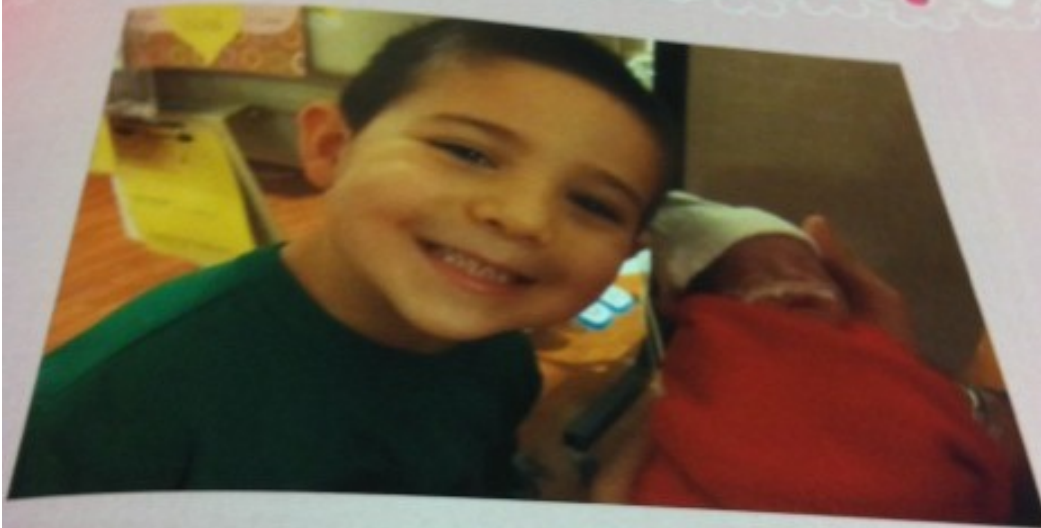


New Me

- ▶ Parents can and should help care for their babies
- ▶ Their care giving is also essential to outcome
- ▶ Parents and staff have the same goals
- ▶ Parents are our partners







My big brother loves me so much. Thank God St. Alexis believes it's important to keep the whole family included in the NICU experience and allows siblings to be involved for bonding and love.

“Non-Technical” Education

- ▶ Non-technical education includes:
 - ▶ the ability to communicate, collaborate, resolve conflicts, and create essential and meaningful partnerships with patients, families and other staff
 - ▶ And should begin in antepartum/delivery room
- ▶ Has not received an equal amount of attention in education and practice.
- ▶ Often ignored our colleagues inability to work well with others, or to have a good “bedside” manner with patients and families.
- ▶ These inadequacies were forgiven because their technical expertise and clinical skills were superior and needed



Non-technical expertise

- ▶ Creating partnerships is a new concept for many of us and requires sharing our “power”.





Experience

- ▶ Mentored traditionally in cultures where families are treated as “visitors”
 - ▶ Not our partners in improving care
 - ▶ Not our partners in safe and quality care
 - ▶ “Visitors” are inconsequential to care
- ▶ Need experiences where families are our partners in care and safety.



Practice

- ▶ System centered care
 - ▶ Priorities of the system and those who work there drive the delivery of health care
 - ▶ “Visitation” policy
- ▶ Parents traditionally limited from being with their baby
 - ▶ Rounds
 - ▶ Report
 - ▶ Admissions
 - ▶ Emergencies
 - ▶ For their baby or other babies
- ▶ Treated as “visitors”
 - ▶ Inconsequential



Practice

- ▶ Patient and family focused care
 - ▶ **FOR not WITH**
 - ▶ Staff develop a discharge plan and present it to the family
 - ▶ “MD responsibilities were interpreted to give MD authority & ability to determine unilaterally what was in the patient’s best interest”
 - ▶ O’Malley, PJ; Brown, K; Krug, SE & the Committee on Pediatric Emergency Medicine (2008) Patient- and family-centered care of children in the emergency department. Pediatrics 122 (2), e511-e521



Practice

- ▶ Goal is engaging families as partners beginning in L and D or antepartum
 - ▶ Partnership
 - ▶ **WITH** not **FOR**
 - ▶ **When possible**
 - ▶ Acknowledgment that family is the constant
 - ▶ Baby born into a family, not a NICU
 - ▶ Support parents in their natural care giving and decision making role
 - ▶ Parents have a **RIGHT** to be with their baby **AND** the baby has a **RIGHT** to be with his family



Parents are our Partners

- ▶ Parents are **NOT** visitors
 - ▶ “visitors” are inconsequential
- ▶ Parents want to:
 - ▶ Be with their baby
 - ▶ Help their baby
 - ▶ Learn to care for their baby



Changing Course



Changing our Practices / Culture

- ▶ Examine philosophy toward parents
- ▶ Are they our partners?
- ▶ Are they part of the team?
- ▶ Are they valued as caregivers and decision makers?
- ▶ Are **ALL** parents valued?



Why Partner with Parents?

- ▶ Participation in care and decision making
 - ▶ Confidence and competence
 - ▶ Improved outcomes
 - ▶ Opportunity to do all they could to help their baby
- ▶ Confidence and competence = improved transition to home



Changing our Culture

- ▶ Change the policy!
- ▶ Family Advisors
 - ▶ Respect/honor patient and family input
 - ▶ At the bedside and beyond
 - ▶ Feedback – discharge surveys, leader rounds
- ▶ Change our language
 - ▶ Language of partnership NOT the language of power



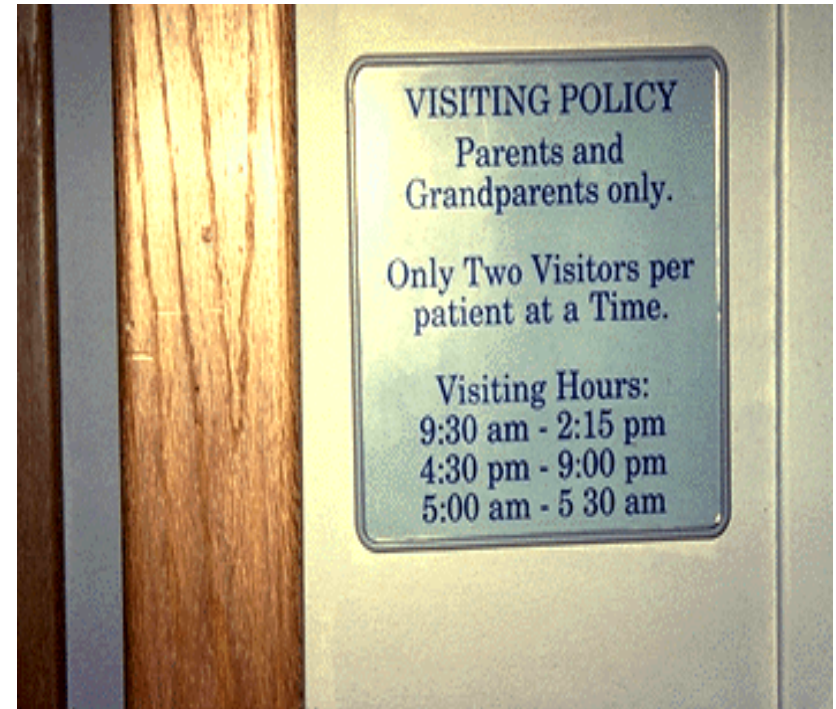


Language of Power

- ▶ Eliminate written and spoken words that do not create and support partnerships
 - ▶ Allow
 - ▶ Permit
 - ▶ Require
 - ▶ Visit
 - ▶ Visitor



Partnerships?





TRADITION

JUST BECAUSE YOU'VE ALWAYS DONE IT THAT WAY
DOESN'T MEAN IT'S NOT INCREDIBLY STUPID.

Language of Partnership

- ▶ Welcome
- ▶ Encourage
- ▶ Support
- ▶ Offer
- ▶ Choose
- ▶ Guidelines



University of Virginia Children's Hospital

First Impressions



Children's Hospital at Dartmouth Lebanon, NH



Partnerships with Families in the Golden Hour

▶ Requirements:

- ▶ develop the skills and tools necessary to communicate and partner with families
 - ▶ NRP- simulation with “family”
- ▶ technical and non-technical expertise are equally valued.
 - ▶ One may be a priority in the moment
 - ▶ One is never more important than the other.



Golden Hour Family Engagement Initiatives





Pre-Delivery Contact

- ▶ Ideally, antenatal contact

- ▶ Neonatologist
- ▶ RN
- ▶ Tour of the NICU

- ▶ In the delivery room

- ▶ “Hi, I am Dr. Jones and I am here with our team to help your baby.”
- ▶ “I know this is scary, you are in good hands. Your baby is in good hands...”



Welcoming Father/Significant Other to Radiant Warmer

- ▶ Not the same if dad “is in the room”
- ▶ Call him to baby’s bedside
- ▶ Share information
- ▶ Explain situation and interventions
- ▶ If serious, needs individual support
 - ▶ Not resuscitation team
- ▶ Don’t forget mom



Words to Use

- ▶ “As you can see, she forgot that she’s not attached to the placenta anymore. So we are helping her breathe.”
- ▶ “We know she isn’t breathing, but she has a good color, heart beat. We are helping her.”
- ▶ “Look how she is fighting us. That is a good sign”.
- ▶ “Mrs. Smith, can you hear me? You don’t hear her cry because she has a breathing tube, but she has a good color and heart beat....”
- ▶ “If she doesn’t start breathing on her own, we will put a breathing tube in her airway...”



Admission

- ▶ Bring dad
- ▶ How can we connect with mom?
 - ▶ iPad?
- ▶ Explain.
- ▶ Wear appropriate attire PRN (lines)
- ▶ Involvement in comfort care if able



Setting the Tone of Partnership

- ▶ “You are not a ‘visitor’, you are his dad. We are going to work together to help him get better. There will be things that only we can do and things that only you can do, but we will be working as partners to help him.”
- ▶ “This is YOUR baby. We are just here to help you care for him/her for awhile”





Facts bring us to
knowledge. Stories bring
us to wisdom.



Learning from Families...
Valerie Krasnoff
ILPQC Parent Advisor



Mom's Voice

- ▶ Time in the delivery room was chaotic, frightening, anxiety producing



- ▶ More than anything, I wish that – during the hours when I was laboring in relative calm – someone had explained to me what could potentially happen. The obstetrician and labor/delivery nurses told us that she “might need to spend a few days in the NICU”, but they said it so casually that I pictured a nursery where she would sleep peacefully for 48 hours before we could take her home.



- ▶ However, it would have been more helpful if the team of doctors that I spoke to pre-NICU had been more candid with us. Maybe that's not their job, and they were trying to keep us calm, but it didn't help in the long run. It's possible that someone tried to explain what was going on in the moments after she was born, but my husband and I were so overwhelmed by seeing our first child for the first time, that it didn't register.



- ▶ I'm not sure that the first moments after the birth of a child is the ideal time to have a serious discussion with parents about a NICU stay/course of action...if my husband could have accompanied the doctors to the NICU and been with Harper during the admission process, I'm sure he would have acquired more presence of mind and been able to digest what was going on and ask questions.



- ▶ I support any attempt to involve the co-parent/dad in the NICU admission process. I don't think that was offered to us, and it was very, very strange (and slightly anxiety provoking) when they took our daughter away minutes after she was born. We had never seen the NICU before, had no idea what to expect (i.e. that should would have an IV when we saw her, etc) and felt out of sorts while we were waiting to visit her for the first time.



Changing Course

- ▶ Begins with everyone of us
- ▶ Patients and families are our partners because we have the same goals.
 - ▶ Safe, satisfying and quality care
- ▶ Suggestions:
- ▶ Change the policy
- ▶ Partner with advisors
- ▶ Use the language of PARTNERSHIP not the language of POWER



Equation for Success

Vision + Skills + Incentives +
Resources + Action Plan =

CHANGE



Equation for Successful **CHANGE**

- ▶ **Vision**

- ▶ Partnership with parents

- ▶ **Skills**

- ▶ Engaging families as partners beginning in the Golden Hour

- ▶ **Incentives**

- ▶ Improved outcomes and satisfaction
 - ▶ Desire to do what is right

- ▶ **Resources**

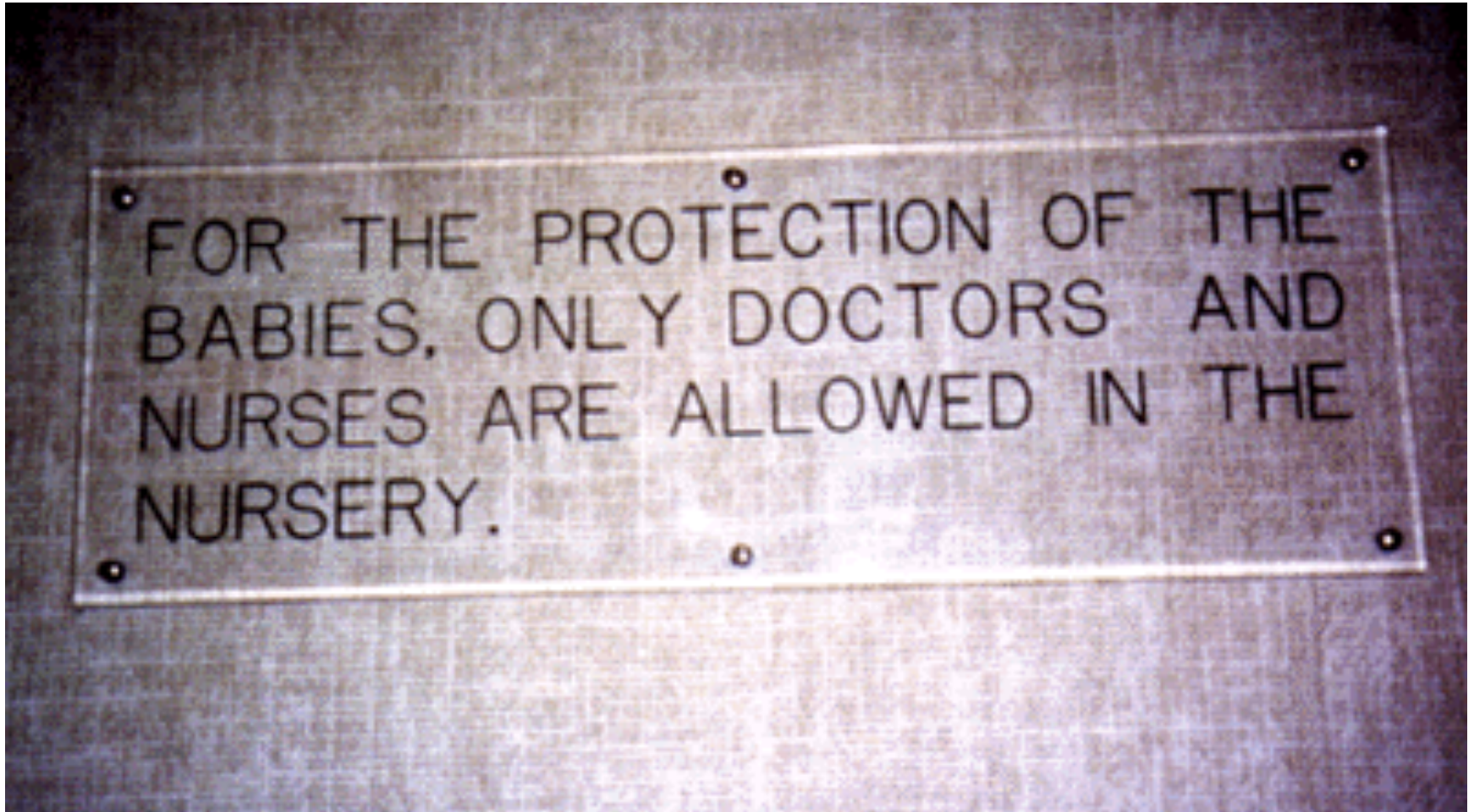
- ▶ Advisors, staff, education, review of literature

- ▶ **Action Plan**

- ▶ Evaluate and improve communication skills



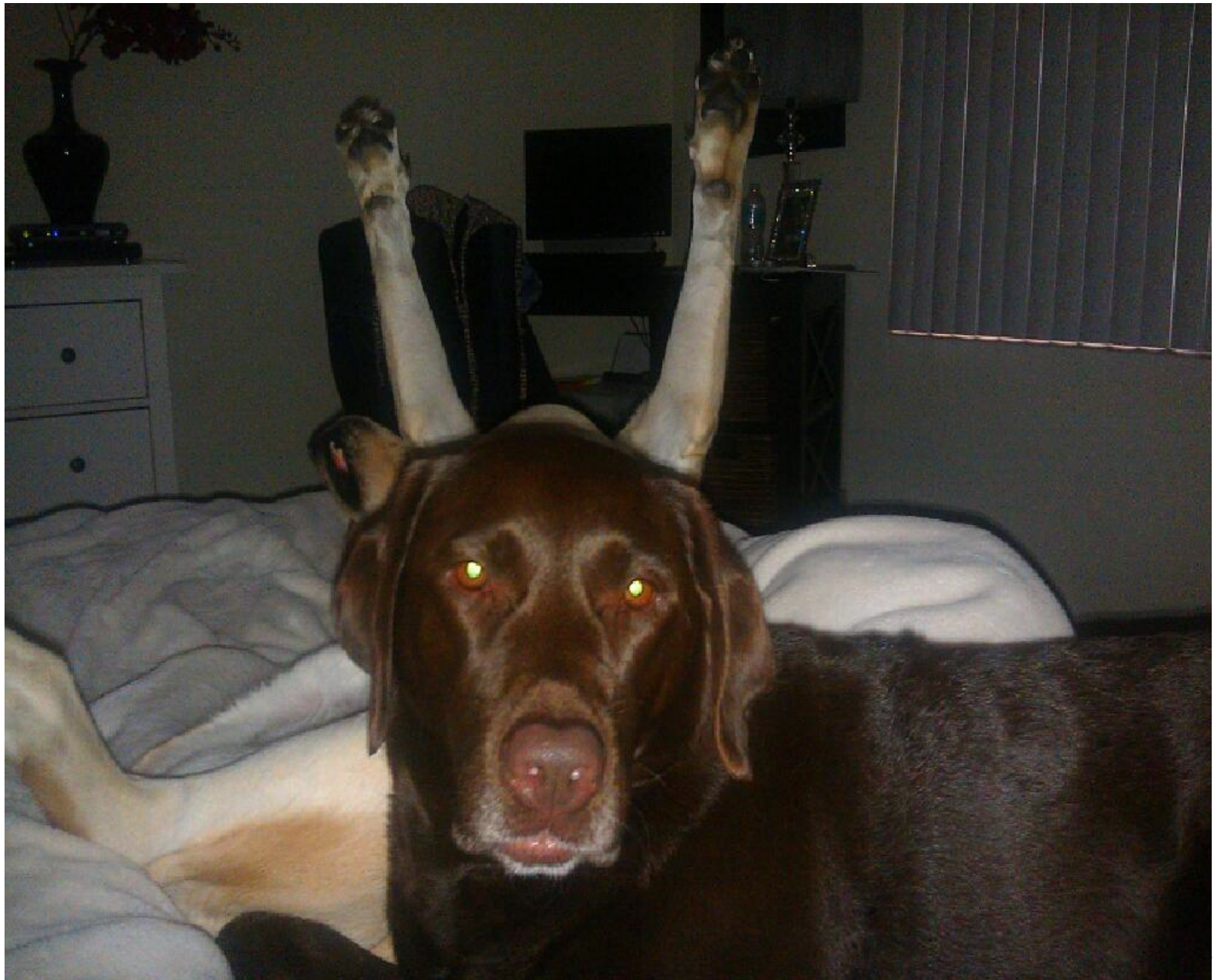
Look how far we've come...





DON'T
KEEP
CALM

GO CHANGE
THE WORLD



Small Group Breakout Sessions

- 1:20: Move to assigned room for topic you selected at registration (see agenda)
- 1:20-1:50pm: Discussion of barriers and opportunities for improvement on topic – identify 3 takeaways to share with the larger group
- 1:50-2:05pm: Debrief with all groups back here



Breakout Sessions: Topics and Locations



Please attend the session for the topic you selected at registration:

- Delayed Cord Clamping: Facilitated by Venkata Majiiga, MD (Lauhoff, Main Floor)
- Temperature Regulation at NICU Admission: Facilitated by Matthew Derrick, MD (Physicians Conference Room, Main Floor)
- Debriefs : Facilitated by Lisa Davis, NNP-BC & Jenny Brandenburg, RN, MSN (Video Conference Room, Lower Level)
- Patient & Family Engagement: Facilitated by Michelle Arrizola, MBA, RN, BSN, IBCLC & Diane Nyari, APN, NP (Fritz, Lower Level)
- IV Glucose: Facilitated by Ann Downey, MD (Pollard Auditorium)

Debrief with Large Group

- DCC
- Temperature
- Debrief
- Engagement
- Glucose



NAS Initiative Workgroup Timeline & Action Items

Leslie Caldarelli, MD

Neonatal Lead, Illinois Perinatal Quality Collaborative and Medical Director
of the Neonatal Intensive Care Unit at Prentice Women's Hospital –
Northwestern Medicine

Jodi Hoskins, RNC, MSN

Perinatal Network Administrator, Rockford
Co-Chair, IDPH NAS Committee

Derrick Rollo, MD and Lisa Davis, NNP
Carle Foundation Hospital

The Problem

- Neonatal Abstinence Syndrome
- 5 fold national increase in rate of NAS
- NAS hospital care costs approx. \$66,500 more than an uncomplicated term birth
- Infants with NAS are 150x more likely to be readmitted within 30 days

NAS in Midwest increased from 1.2 per 1000 births in 2000 to 6.9 per 1000 births in 2012

In IL NAS infants hospital care costs approx. \$27.2 million (2013)

The Role of ILPQC

- To identify and implement potentially better practices for the identification and treatment of fetal opioid exposure with the aim of reducing neonatal morbidities, hospital length of stay, and pharmacological treatment for newborns in Illinois

Possible AIM

- The Neonatal Abstinence Syndrome (NAS) Initiative aims to reduce length of stay by 1 day through improved identification of affected mother/baby dyads and implementation of compassionate treatment for infants born with NAS

NAS: CDC Proposed Measures For Workgroup Discussion

- Increase consistent utilization of a reliable infant screening tool for infants with known exposure
- Increase use of standardized non-pharmacological bundle as a first line treatment
- Increase standardization of NAS pharmacological treatment
- Addition of OB measures with additional funding

ILPQC NAS Workgroup

35 Members Representing:



- Stroger (3)
- Memorial Hospital Of Carbondale (2)
- Advocate Lutheran
- UIC
- St. Louis University of Medicine (2)
- Barnes Jewish Memorial
- Lurie Children's (4)
- HSHS St. John's Hospital (2)
- University of Chicago
- Central Dupage
- McDonough Medical Group
- OSF St. Francis Medical Center
- Southern Illinois University Healthcare
- Northwestern Medicine Lake Forest
- Swedish American
- AMITA Adventist Medical-Hinsdale
- Loyola University
- Advocate Condell Medical
- SSM Cardinal Glennon
- UIC
- St. Alexis Medical Center

ILPQC NAS Advisory Group



- To develop and implement a NAS quality improvement initiative based on successful work in other states and adapted for Illinois, including development of:
 - Smart AIM, Process, Outcome, and Balancing Measures
 - Data Forms and Reports
 - Toolkits/ Resources
 - Hospital Recruitment Procedures
 - Collaborative Learning Content
 - QI Support Models
- Work in collaboration with the IDPH NAS Advisory Committee to align QI work with their recommendations and provide recommendations on the above

Progress for Neonatal Abstinence Syndrome Advisory Committee

Jodi Hoskins, RNC, MSN Perinatal Network Administrator / Northwest Illinois Perinatal Center

Shelly Bateman Regional Director of Advocacy and Government Affairs / March of Dimes

Amanda Bennett, PhD CDC Assignee in Maternal and Child Health Epidemiology / IDPH

Illinois State Legislation



- In May 2015, the Illinois legislature updated the Administrative Code, Department of Public Health Powers and Duties Law (20 ILCS 2310/2310-677) to include the formation of the

“Neonatal Abstinence Syndrome Advisory Committee”

- Advises IDPH on issues related to NAS and improving the outcomes of pregnancies with respect to NAS
- Has no independent authority to implement its recommendations
- Reports yearly to Illinois General Assembly on March 31st
- Final report is due March 31, 2019

Illinois NAS Advisory Committee

Charged with:

1. Develop an appropriate standard clinical definition of “NAS”
2. Develop a uniform process of identifying NAS
3. Develop protocols for training hospital personnel in implementing an appropriate and uniform process for identifying and treating NAS
4. Identify and develop option for reporting NAS data to the Department by using existing or new data reporting options
5. Make recommendations to the Department on evidence-based guidelines and programs to improve the outcomes of pregnancies with respect to NAS

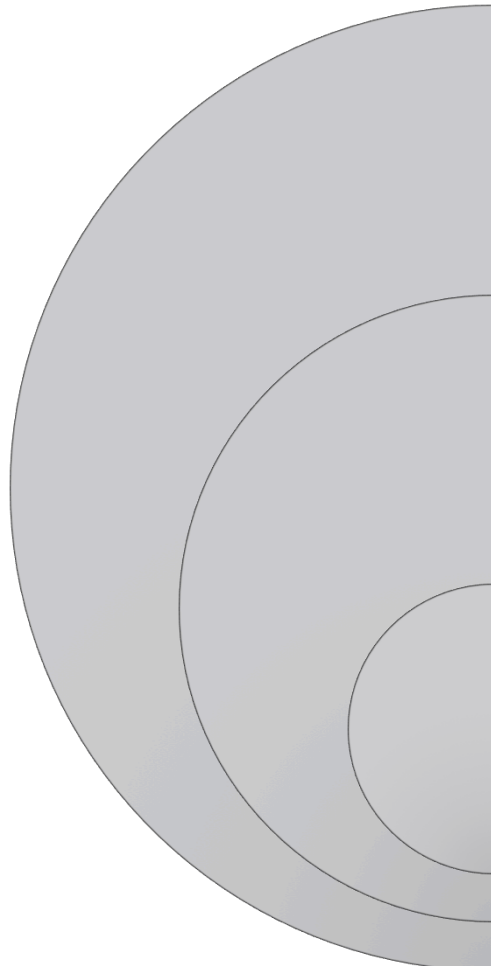
Illinois NAS Advisory Committee

- At least 10 voting members appointed by the Director of Public Health
 - Association of hospitals representative
 - Pediatrician
 - Obstetrician
 - Advocate for the health of mothers and infants
 - Licensed physician
 - Licensed practical nurse, registered professional nurse, or advanced practice nurse with expertise in the treatment of newborns in NICU
 - Representative from a local or regional public health agency
 - Expertise in the treatment of drug dependency and addiction

Progress

- Required to meet a minimum of three times per year
- Advisory Committee sunset date is June 20, 2019
- Beginning February 2016-the committee has met a total of six times to date.

Illinois NAS Advisory Committee



Considered NAS legislation from a national perspective	<ul style="list-style-type: none">• Florida• Ohio• Indiana• Tennessee
Broaden membership composition	<ul style="list-style-type: none">• Representation from urban and rural areas• Families impacted by NAS
Review of existing NAS data	<ul style="list-style-type: none">• Hospital discharge data<ul style="list-style-type: none">• DC codes reviewed for bias• APORS• Medicaid claims• Prescription drug monitoring program

Illinois NAS Advisory Committee

- **Objective #1: Develop standard NAS definition:**

“Neonatal Abstinence Syndrome refers to the collection of signs and symptoms that occur when a newborn prenatally exposed to prescribed, diverted, or illicit opiates experiences opioid withdrawal. This syndrome is primarily characterized by irritability, tremors, feeding problems, vomiting, diarrhea, sweating, and in some cases, seizures.”

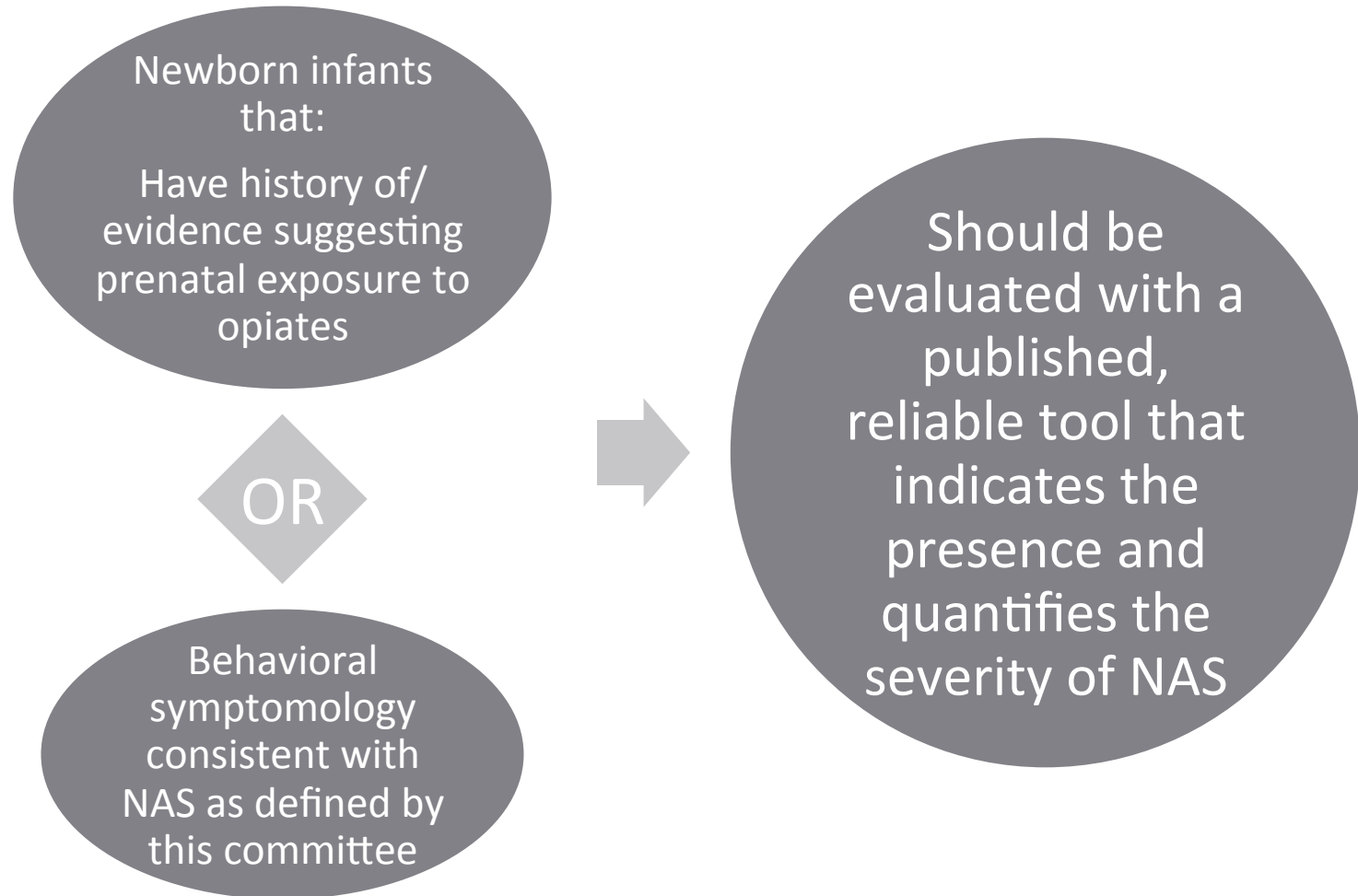
Illinois NAS Advisory Committee

- **Discussion of Objective #2: Develop uniform process to identify NAS**
 - Need for improvement in detection and diagnosis
 - Universal drug screening during the prenatal period
 - Criteria for screening
 - Utilization of the Prescription Monitoring Program (PMP) in screening assessment
 - When toxicology screening should be considered
 - *Maternal consent need acknowledged
 - Committee researched and reviewed NAS implementation measures from other states

Illinois NAS Advisory Committee

- Conclusions from review for Objective 2:
 - Substance use screening using a validated verbal or written questionnaire for all pregnant women.
 - At minimum: first visit and presenting in Labor and Delivery
 - Toxicology screening to be considered if it will help guide management

Illinois NAS Advisory Committee



Illinois NAS Advisory Committee

- Recommendation that newborns with history, or signs/symptoms of prenatal opioid exposure be:
 - Referred for early intervention evaluation and subsequent services
- Neonatal toxicology screening
 - Committee to recommend criteria
 - Committee to develop decision tree for screening decision making

Illinois NAS Advisory Committee

- Looking forward...
 - Amanda Bennett, IDPH Epidemiology, shared possible sources of data to consider to satisfy Objective #4: data reporting options:
 - Vital records, hospital discharge, Medicaid claims, and the national survey on drug use and health.
 - Protocol development and what hospital personnel training and education dissemination will include.
 - Committee has added/conducted an extra meeting to speed up the process of addressing the objectives.

Illinois NAS Advisory Committee

- Looking forward (Cont.)...
- Collaboration and communication with ILPQC to streamline the NAS initiative roll-out of the NAS Advisory Committee's recommendations on the five objectives they are charged with regarding NAS and improving the outcomes of pregnancies with respect to NAS



Lisa Davis, NNP-BC, MSN

DECREASING METHADONE LENGTH OF TREATMENT FOR NAS

Team

- Lisa Davis, NNP-BC, MSN
- Derrick Rollo, DO, Asst. Medical Director NICU
- William Stratton, MD
- Linda Swartz, RNC, Leslie Preslar, RN, Amanda Phares, RN



Problem in our area

2012: 10-12 NAS babies treated per year at Carle Foundation Hospital. Average NICU length of stay for treated infants was 42 days and treatment plans were not standardized.

2013-2014: Joined Vermont Oxford Network iNICQ NAS project

2016: Increase in NAS patients per year to ~20

Aim

- Reduce length of stay by 20% for treated NAS infants

Implementation of NAS guidelines

- 2013: NAS protocol, including admission and standardized treatment guidelines; staff education/reliability training
- Morphine and methadone as choices for treatment
 - Weaning calculator developed
- 2015: Change to methadone as primary treatment drug

Methadone dosing

	Methadone dose	Dosing interval	No. doses
Step 1	0.1 mg/kg	Every 6 h	4
Step 2	0.07 mg/kg	Every 12 h	2
Step 3	0.05 mg/kg	Every 12 h	2
Step 4	0.04 mg/kg	Every 12 h	2
Step 5	0.03 mg/kg	Every 12 h	2
Step 6	0.02 mg/kg	Every 12 h	2
Step 7	0.01 mg/kg	Every 12 h	2
Step 8	0.01 mg/kg	Every 24 h	1

Escalation: If infant fails step 1 (score >12), consider steps 1A through 1C.

	Methadone dose	Dosing interval	No. doses
Step 1A	0.1 mg/kg	Every 4 h	6
Step 1B	0.1 mg/kg	Every 8 h	3
Step 1C	0.1 mg/kg	Every 12 h	2

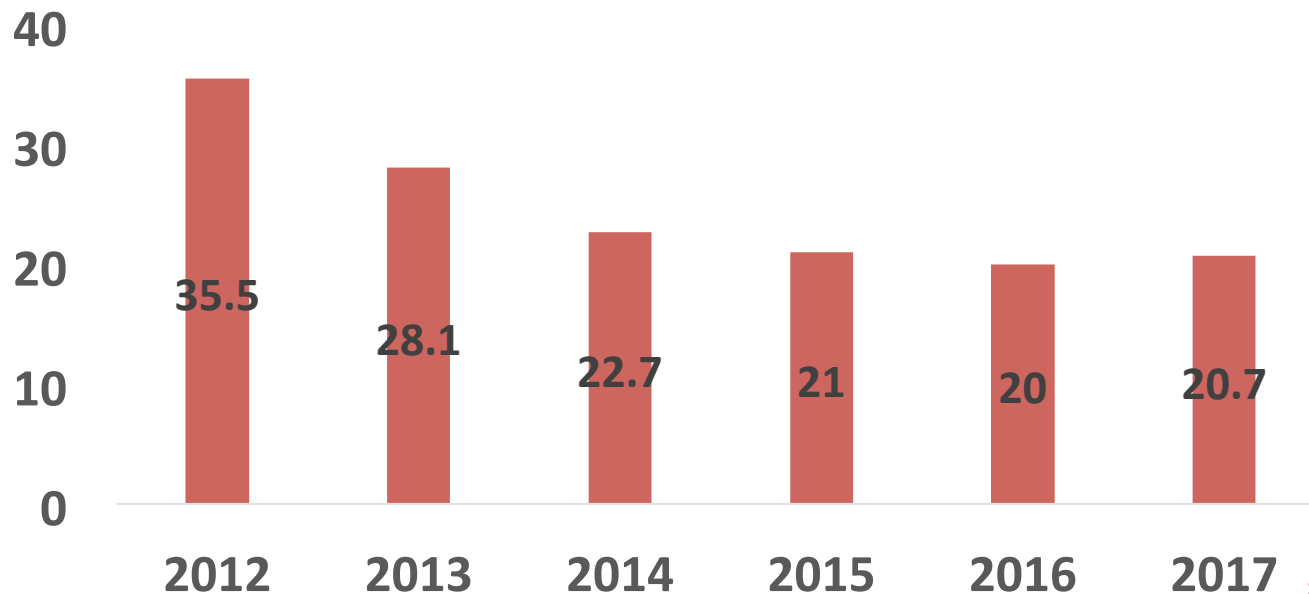
Results

- 2014 data show LOS decreased from 42 days in 2012 to **22 days**
 - **48%** reduction in length of stay and duration of treatment, with standardized guidelines
- Changed guideline to methadone 2015 (*Cincinnati Children's guideline*)
- Average length of stay for treated infant 2017: **20.7 days in the NICU**

Average Days of Narcotic Treatment for NAS: 77 Consecutive Cases CFH NICU 2012-17

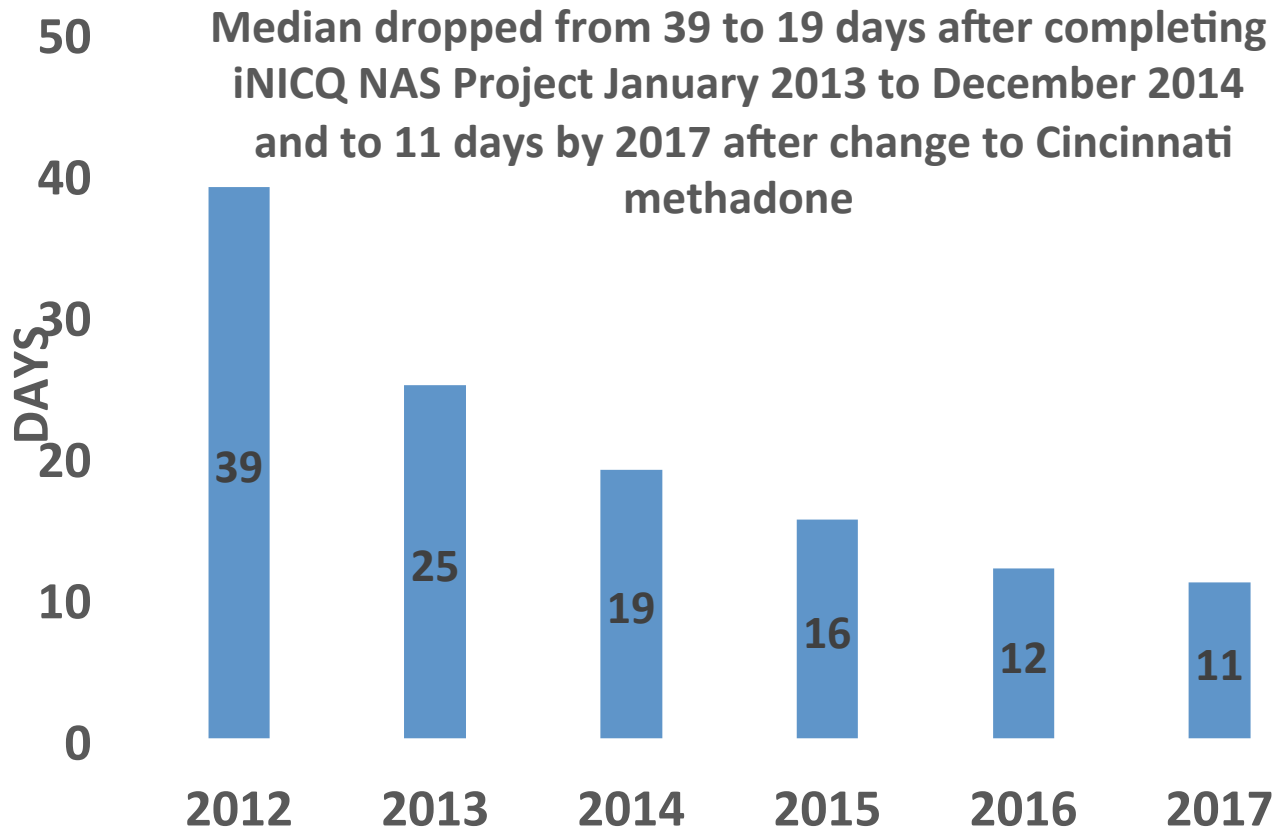
(7 cases Q1 2017)

Average dropped from 35 to 23 days after completing
iNICQ NAS Project January 2013 to December 2014
and to 21 days after change to Cincinnati methadone
guide



Median Days of Narcotic Treatment for NAS: 77 Consecutive Cases CFH NICU 2012-17

(7 cases Q1 2017)



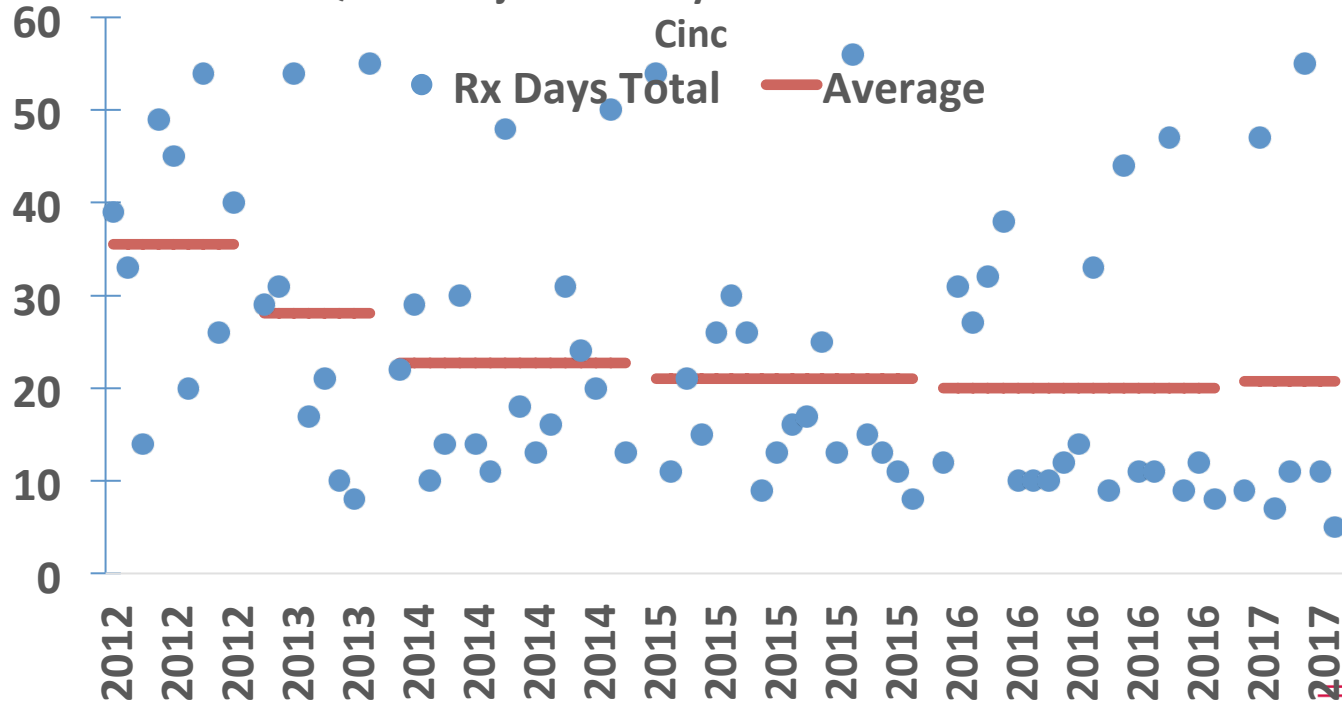
Days Narcotic Treatment for NAS: 77 Consecutive Cases CFH NICU 2012-17

(7 cases Q1 2017)

Average dropped from 36 to 23 days after first written
guideline and standardized Finnegan scoring started Fall

2013

iNICQ NAS Project January 2013 to December 2014



Challenges and lessons

- Antenatal consults important
- Need buy-in from OB staff
- Peds/Newborn/NICU staff reliability training for NAS scoring
- Follow up with nursery patients pre-discharge
- Adjunctive meds if 2 failed weans
- Stress non-pharmacologic strategies
 - In room care with mother if possible

NAS Initiative Action Items

- Schedule first ILPQC NAS Workgroup Meeting
 - Reviews resources from Ohio, Massachusetts, Florida, Tennessee
 - Identify other state's aims, measures, key drivers, interventions, education and adapt for Illinois
- At July 20th IDPH NAS Advisory Committee Meeting, ILPQC NAS Workgroup representatives will present a summary of other state approaches for discussion

THE GOLDEN HOUR FINISH LINE

Golden Hour Progress on Data Submission

Use the ILPQC Data & Reporting System to Inform Your QI Work



- Collect monthly data and enter into REDCap (monthly data entered by the 15th of the month for the previous month)
- Share your data broadly: team, providers, staff
- Contact ILPQC or your PNA with any questions

Attend Monthly Neo Team Calls to Share Strategies



Call Date

Topic

June 20
2-3pm

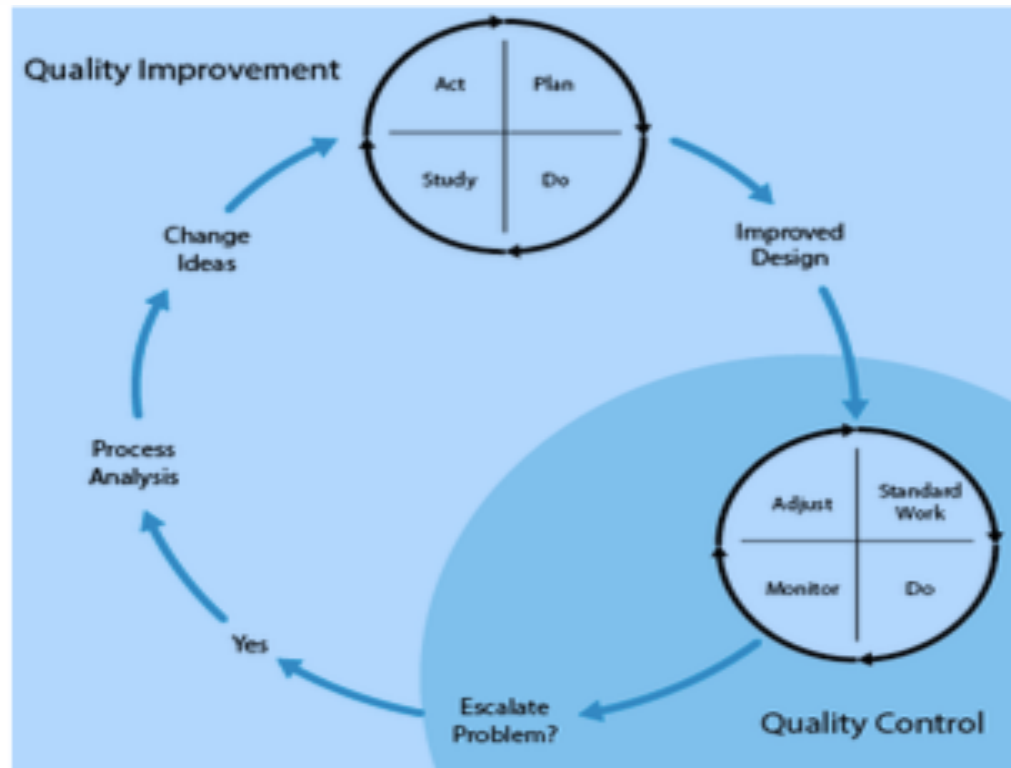
July 28
2-3pm

August 15
2-3pm

September 19
2-3pm

October 17
2-3pm

SUSTAINABILITY



Questions & Wrap-up





THANKS TO OUR SPONSORS