Delivery Buddy: NRP Support via Telemedicine

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Introductions

- Bridget Allen RNC, MS
  - Clemson University undergraduate and graduate school. Masters Maternal / Infant CNS
  - Career has included roles as NICU staff nurse, transport team nurse and the nurse manager of a Level III NICU
  - Currently the Neonatal Outreach Educator for Greenville’s region
Introductions

• Carley Howard, MD, FAAP
  – MUSC Medical School Graduate 2005
  – GHS Pediatric Residency 2008
  – Pediatric Hospitalist GHS/AnMed Health 2008-present (pediatric floor, level I & II Nursery)
  – GHS Senior Medical Director Pediatric Primary Care 2015-present
  – Interest in telemedicine, assist with pediatric programming at GHS
Our Children’s Hospital

- Greenville Health System Children’s Hospital
  - 44 Inpatient medical-surgical beds
  - 12 Pediatric Intensive Care Unit (PICU) beds
  - Multiple pediatric specialties represented
  - Upstate’s only 24 hour dedicated Children’s Emergency Center
  - Only pediatric cancer center in the Upstate

- Level III NICU
  - 80 Beds
  - 9 neonatologists and 11 NNP’s
South Carolina Perinatal Regions

**Midlands Perinatal Region**
*Palmetto Health Richland*
(Aiken, Allendale, Bamberg, Barnwell, Calhoun, Clarendon, Fairfield, Kershaw, Lancaster, Lee, Lexington, Newberry, Orangeburg, Richland, Sumter, York)

**Piedmont Perinatal Region**
*Greenville Memorial Medical Center*
(Greenville, Pickens, Oconee, Anderson, Abbeville, Laurens, Greenwood, McCormick, Saluda, Edgefield)
*Spartanburg Regional Healthcare System*
(Spartanburg, Cherokee, Union, Chester)

**Low Country Perinatal Region**
*Medical University of South Carolina*
(Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Hampton, Jasper)

**Pee Dee Perinatal Region**
*McLeod Regional Medical Center*
(Chesterfield, Darlington, Dillon, Florence, Horry, Marion, Marlboro, Williamsburg)

Updated 12/6/2006
Our Problem

• Local Pediatric Group
  – Raised concerns with continuing to cover deliveries at local community hospital
  – Needed to focus on outpatient care to provide better access to patients with minimal interruptions in day
Our Problem

- Local Pediatric Group
  - Difficult to maintain competence/confidence
    - Community pediatricians rarely lead complex neonatal resuscitations
      - Extensive resuscitation ~1% of births
    - Called in emergently – arrive after initial critical care
    - Neonatal resuscitation/critical care expertise concentrated at centers with NICUs
Our Question

Question posed on pediatric hospitalist list serve – How are other areas in the country creatively covering their nurseries amongst these challenges, especially in more rural areas or outlying hospitals?
TeleBaby

• Modeled after TeleBaby at Legacy Emmanuel Children’s Hospital in Portland, Oregon
  – Dr. Lauren Rose, consultant, February 2015
  – TeleBaby’s Vision of Care:
    • To develop a telemedicine partnership between community hospitals and a tertiary care children’s hospital to provide immediate access to NICU expertise during neonatal resuscitations
Previous care model

• Nursery Team Initiates Resuscitation
  – Potentially uneven skill sets/skill levels

• Nursery Team Calls Pediatrician/Code Team
  – Help arrives many minutes into the resuscitation
  – Members may be unfamiliar with NRP algorithm

• Transfer Initiation (and Neuroprotective Cooling) Delayed Until After Resuscitation
  – Pediatrician arrives>baby stabilized>calls made
TeleBaby model

- Hub & Spoke Structure -
  - Remote NRP leader at tertiary care children’s hospital NICU leads resuscitation at satellite site
  - Via telemedicine robot
  - NRP expert leadership within seconds to minutes
TeleBaby Model

- Remote Hands-off Leader Improves Care
  - Whole picture: observes, analyzes, directs
  - Prevents “task-saturation”
    - Diving Analogy
  - Better communication and teamwork improve safety
GHS Implementation

• Initial Reluctance
  – Change in NNP role from active participant to observing/leading
  – Anxiety on being unable to physically intervene
GHS Implementation

• Choosing Equipment
  – Why InTouch?
    • 24/7 IT Support
    • For low volume, high acuity situations, need assurance equipment works when needed
GHS Implementation
GHS implementation

• Designed Workflow
• Neonatologists and NNPs trained on InTouch software
• Sim Center mocks for NICU Staff
Delivery Buddy

Your Connection to Your Neonatal Nurse Practitioner Team

To initiate a consult, call
(864) 455-0000
Delivery Buddy
Delivery Buddy
Delivery Buddy Launched

• First site: Laurens County Memorial Hospital 12/7/15
  – Laurens staff (Nursing, RTs, Providers) trained on robot
  – Mock calls utilizing referral center for Laurens Staff
Delivery Buddy Launched
Delivery Buddy Launched

• Second site: Baptist Easley Hospital to Go-Live 4/4/16
• Third Site: Oconee Memorial Hospital Go-Live 9/7/16
• Planned Fourth Site: Patewood 7/1/17
Delivery Buddy Launched
Delivery Buddy Launched
Outcomes

• Laurens Deliveries for 2015 were 352. They have had 227 deliveries since their Go-Live.
  – 2 calls for a total of 3 infants (1.3%)
  – 31 week twins with Respiratory Distress Syndrome, another infant with Respiratory Distress

• Easley 2015 Deliveries were 442. They have had 141 deliveries since their Go-Live.
  – 1 call (0.7%)
  – IUGR

• NNP response time within seconds to minutes
Outcomes

• Legacy Emmanuel utilization ~2% of deliveries
• Legacy also tracking time to neuroprotective cooling initiation and seeing improvement.
Subjective outcomes

• Better teamwork and communication
• Easily identifiable leader
• Smoother resuscitations
• Faster interventions
• Decreased time to transport
• Better transition of care between nursery and NICU
• Improved staff confidence
• Improved family satisfaction
Subjective Outcomes

• "In the tertiary care setting, pediatricians, OBGYNs, and nurses enjoy the comfort of knowing the NICU team is a few steps away. This team is well practiced in the art of neonatal resuscitation. In the community hospital setting, we have few opportunities to review this skill set. Delivery Buddy gives our community hospital real time access to the experience and expertise of the neonatal providers at the regional tertiary care center. This is an invaluable source of comfort and confidence for the staff, providers, and families in our community labor and delivery unit when faced with an infant requiring resuscitation."

– Rebecca Wright, MD
Subjective Outcomes

- Delivery Buddy “provides an invaluable resource for communication between the community hospital and the NICU that can allow for safer, more efficient and seamless care of sick neonates”
  – Christina Neeley, MD
Subjective Outcomes

• “I have found Delivery Buddy has allowed me to observe the care being provided in our outlying hospitals and help provide them with guidance and education to improve our neonatal outcomes.”
  – Treasure Snyder, NNP
Special Thanks

• Special thanks to Dr. Lauren Rose at Legacy Emmanuel Children’s Hospital for sharing information and materials