Safe Sleep: Balancing Skin to Skin contact with the risk of Sudden Unexpected Postnatal Collapse

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Objectives

1. Describe sudden postnatal collapse of apparently healthy newborns (SUPC)
2. Review recommendations to prevent SUPC
3. Identify high risk situations that require closer infant monitoring during skin-to-skin
Sharp Mary Birch Hospital for Women & Newborns

- Over 9,000 babies are born each year at Sharp Mary Birch Hospital for Women & Newborns
- Located in San Diego
- Highest delivery rate of any hospital in California
- Nationally recognized for its care of expectant mothers and newborns
- Level III neonatal intensive care unit (NICU)

- Sharp Mary Birch provides a full range of women's services, including robotic gynecologic surgery
- Magnet and Baby Friendly designations achieved 2015

Skin-to-Skin: What Is It?

- Placing unclothed infant in an upright position against mother’s bare chest with the infant and mother covered by a blanket
History of Skin-to-Skin

• 1979- Bogota, Columbia- Drs. Rey and Martinez started sending very low birth weight and premature infants home cared for between their mother’s breast in a vertical position and fed only breast milk.

• 1985- UNICEF brought attention to the program. Throughout several years, utilized Kangaroo Care in several part of the world such as Latin America, Africa, Asia, and several European countries.

• 1991- first research review published conducted on Kangaroo Care

• 1991- Baby-Friendly Initiative program launched with 10 Steps to Successful Breastfeeding

History of Skin-to-Skin cont’d

• 1996- First International Conference on Kangaroo Care was held in Baltimore, Maryland

• 2005- The American Academy of Pediatrics recommended healthy infants be placed skin-to-skin immediately after delivery until the first feeding was accomplished

• 2006- Neonatal Resuscitation Textbook 5th Edition supported vigorous newborns without risk factors and clear amniotic fluid to be placed skin-to-skin

• 2009- The Joint Commission Perinatal Core Measures

• 2009- Cochrane Collaborative: Early skin-to-skin contact for mothers and their healthy newborn infants (Review)

• 2016- AWHONN Practice Brief #5: Immediate and Sustained Skin-to-Skin Contact for Healthy Term Newborn After Birth
Benefits of Skin-to-Skin

• Recommended for all healthy term newborns due to physiologic and bonding benefits

• **Benefits of skin-to-skin contact include:**
  • Regulation of infant’s temperature and prevention of hypothermia
  • Neonatal blood glucose regulation and prevention of hypoglycemia
  • Initiation and maintenance of exclusive breastfeeding and enhanced milk production
  • Emotional bonding

Recommendations for Skin-to-Skin

• Supported by various organizations such as the Academy of Pediatrics, The American College of Obstetrics and Gynecology, The Association of Women’s Health Obstetrics and Neonatal Nurses, and The Joint Commission

• Skin-to-Skin contact should be done immediately after birth until the first feeding at the breast has been achieved (AAP, 2005, 2012).

• AWHONN(2016) recommends that an appropriately trained health care professional be in attendance for all immediate skin-to-skin sessions during the first 2 hours of life and that the mother be observed frequently during this time.
Sharp Mary Birch Hospital’s Journey with Skin-to-Skin

- **2008** skin-to-skin Initiative was started:
  - Incorporating evidenced into practice takes time
  - Determine the best method to implement
- **2010**- Ten Steps of Baby Friendly added to Breastfeeding policy and procedure
- **2011**- Incorporated skin-to-skin education for all obstetrical nurses as part of their competency evaluation program as a result of the policy change
- **2012**- Focused education on the benefits of skin-to-skin from Labor and Delivery to Well Newborn Care

Sharp Mary Birch Hospital’s Journey with Skin-to-Skin cont’d

- **2013**- Skin-to-skin is not without risk for adverse neonatal outcome:
  - Recognized there was a need for clinical guidance for safe skin-to-skin to ensure safe and consistent nursing practice at the bedside and to support productivity and staffing needs in L&D.
  - Literature review was performed in collaboration with obstetricians and neonatology team to coordinate efforts to standardize practice guidelines for all well newborns.
The Journey Continues

• **2014**: Implemented every 2 hour nurse rounding on postpartum related to decreasing infant falls

• **2016**: Adjusted rounding to every 4 hours for the first 24 hours postpartum

SUDDEN UNEXPECTED POSTNATAL COLLAPSE (SUPC)
Definition

• **Sudden Unexpected Postnatal Collapse (SUPC)** of a healthy term infant is described as either an apparent life-threatening event (ALTE) or a sudden unexpected death in infancy (SUDI) occurring within the first week of life (Herlenius & Kuhn, 2013).

• These infants are born at term and **do not have any identified risk factors** (e.g. congenital anomalies, prematurity, perinatal asphyxia).

Background

• SUPC of a healthy newborn is a rare event, however carries a high risk for mortality and significant neurological disability at 1 year of age for those infants who survive.

• In 66% of infants who die, an underlying cause could not be identified postmortem (Herlenius & Kuhn, 2013).

• Several countries have reviewed their incidence of SUPC but do not have consistent criteria (e.g. SUPC within varying time frames, gestational age, and Apgar scoring).
### Incidence of SUPC

<table>
<thead>
<tr>
<th>Country</th>
<th>Incidence of SUPC in Live Term Infants</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>3/100,000</td>
</tr>
<tr>
<td>Sweden</td>
<td>38/100,000</td>
</tr>
<tr>
<td>France</td>
<td>3.2-3.6/100,000**</td>
</tr>
<tr>
<td>Spain</td>
<td>5.5/100,000**</td>
</tr>
<tr>
<td>Germany</td>
<td>2.6/100,000</td>
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** Only determined cases of SUPC within the first 2 hours of life

### Newborn’s Age When SUPC Occurred

Of the 398 cases that were reviewed by Herlenius & Kuhn (2013) SUPC was reported at the following time frames:

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Less Than 2 Hours of Age</td>
<td>36%</td>
</tr>
<tr>
<td>Between 2-24 Hours of Age</td>
<td>29%</td>
</tr>
<tr>
<td>Between 24-72 Hours of Age</td>
<td>24%</td>
</tr>
<tr>
<td>Between 4-7 Days of Life</td>
<td>9%</td>
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Contributing Factors For SUPC

1. Primiparous women with lack of knowledge on proper positioning during skin-to-skin and unaware of newborn signs of wellness
2. Infant found in prone position skin-to-skin or breastfeeding
3. Improper positioning of newborn during skin-to-skin contact
4. Skin-to-skin contact without adequate surveillance
5. Collapse occurred between 2100 and 0859
6. Mother or both parents were left unattended by healthcare provider
7. Distractions (e.g. smart phone use)
   a. Cell phone served as a distraction
   b. Average of 30 messages sent by mother within 2 hours after birth

Improper Positioning of Newborn During Skin-To-Skin

Outcomes

• Of the 233 Sudden Unexpected Postnatal Collapse cases reviewed, in 153 cases no etiology was found.

• Some infants who have suffered SUPC do not have any negative outcomes but many suffer neurologic sequelae or death.

Recommendations for the Prevention of SUPC at Sharp Mary Birch Hospital

Educate New Mothers & Parents about:

1. Signs of newborn wellness (e.g. airway, breathing, and color).
2. Maintaining a safe position for the newborn while breastfeeding and skin-to-skin (e.g. ensure upper airway patency).
3. Avoiding prone positions and other risk factors associated with SIDS.
4. Avoiding the use of smart phones while infant is breastfeeding or skin-to-skin
Recommendations for the Prevention of SUPC at Sharp Mary Birch Hospital cont.

**Healthcare providers:**

1. Encourage skin-to-skin contact with *adequate supervision*.

2. Position the newborn in a supine position to avoid airway obstruction or possibly asphyxiating position.

3. Closely monitor newborn’s clinical condition and provide continuous clinical supervision of mothers at risk (primiparous, support person not in room and exhausted).

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**Recommended Skin-To-Skin Position**

1. Infant’s head is on mother’s chest (not abdomen or breast)
2. Unobstructed view of mouth and nose
3. Mother is able to see infant’s face
4. Blanket is over infant’s shoulders and not covering face or head
CURRENT PRACTICE AT SHARP MARY BIRCH HOSPITAL FOR WOMEN & NEWBORNS

Early Skin-to-Skin Algorithm

• In Labor & Delivery and PACU, infants are categorized according to assessment at time of delivery:
  • Not candidates for skin-to-skin
  • Skin-to-skin eligible
  • Require additional observation to be eligible for skin-to-skin
Infants NOT Candidates for Skin-to-Skin

- Infants with any of the following risk factors are NOT candidates for Skin to Skin:
  - Required more than a few breaths of PPV, endotracheal intubation and/or chest compressions or have Apgar score < 7 at 5 minutes.
  - Physiologically unstable require Advanced Life Support (ALS) evaluation.
  - These infants need care in an environment where monitoring of temperature control, vital signs (heart rate, SpO2, and blood pressure) and appropriate laboratory testing can be provided.

Infants that are Eligible for Skin-to-Skin

- Infant is STABLE (normal heart rate, normal respiratory effort and normal color) at delivery AND mother is alert and physiologically stable:
  - Place infant skin-to-skin and cover with a dry blanket:
    - With mother in semi-recumbent position (not flat), place infant on mother’s skin, not on her clothing.
    - It is critical to insure that the infant’s face is not covered to allow for visualization by the health care team and to decrease retention of carbon dioxide (CO2).
    - Nurses caring for the infant should be able to visualize the infant’s face during skin-to-skin and assess that the nose and mouth are not occluded.
  - If infant exhibits labored respirations (grunting, flaring, or retracting), cyanosis or change in color, infant should be moved to the radiant warmer for increased observation.
Infants Requiring Additional Observation for Skin-to-Skin

- Infants with any of the following risk factors require ADDITIONAL OBSERVATION:
  - Required CPAP or brief Positive Pressure Ventilation (PPV), had Apgar score $\leq 3$ @ 1 minute, but who then recovers and has Apgar score $\geq 7$ at 5 minutes
  - Mother received Magnesium Sulfate therapy
  - Late preterm birth (34-36 6/7 week GA)
  - Fatigued mothers
  - Sedated mothers

Additional Observation

- Infants requiring resuscitative measures will receive those interventions on the radiant warmer.

- Other infants with these high risk factors will be taken directly to the radiant warmer to allow for thorough assessment and determination of maternal/infant stability.
Additional Observation cont.

• Once the infant’s and mother’s condition has stabilized enough to allow for skin-to-skin, place oxygen saturation monitor on infant’s right wrist, place infant skin-to-skin, and cover with a dry blanket.

• With mother in semi-recumbent position (not flat), place infant on mother’s skin, not on her clothing.

• It is critical to insure that the infant’s face is not covered to allow for visualization by the health care team and to decrease retention of carbon dioxide (CO2).

• Nurses caring for the infant should be able to visualize the infant’s face during skin-to-skin and asses that the nose and mouth are not occluded.

Oxygen Saturation

• Once stabilized after delivery, the infant’s oxygen saturation should be monitored for approximately the first 2 hours of skin-to-skin. Target range is between 92-100%.

• If the infant’s oxygen saturation remains within target range (92-100%) for the first approximately 2 hours of skin-to-skin, the probe should be removed and the infant should be transitioned to couplet care.

• If oxygen saturation falls below 92%, reposition probe, assess infant’s status and continue to monitor.

• If oxygen saturation remains below 92%, infant should be transferred to the radiant warmer for increased assessment and observation.

• If oxygen saturation continues to remain below 92% after transfer to the radiant warmer, the ALS team should be notified immediately for further assessment of the infant.
Nursing Education on Safe Skin-to-Skin

- All nurses in L&D, PACU and mother baby units continue to be educated on the signs of newborn wellness.

- Nursing staff in the aforementioned units *teach parents* signs of newborn wellness:
  - **Airway** - When holding your baby, breastfeeding or practicing skin-to-skin, always make sure you can see the baby’s mouth and nose to ensure breathing isn’t blocked
  - **Breathing** - Watch for your baby’s tummy rise and fall with each breath
  - **Color** - Baby’s lips and tongue should be pink

Nursing Documentation of Parent Teaching

- Document nursing teaching of infant safety occurs in the electronic medical record, including content and who was taught.

- Document nursing teaching of the H.E.L.P. Line as well
Physician Education

• As part of the healthcare team, obstetricians and pediatricians were educated about safe skin-to-skin and sudden unexpected postnatal collapse through hospital based quality meetings and a physician newsletter written by the chief medical officer.

Prenatal Education

• Newborn signs of wellness were incorporated into the Pre-Admission Guide given to all women who are registered to deliver at Sharp Mary Birch Hospital:

  • Skin-to-skin section
  • Safety section
  • Care Partner section
Parent Education

• Newborn signs of wellness education developed and incorporated into patient education:
  • Preventing Infant Falls poster found in patient rooms was transitioned into a NEWBORN SAFETY poster.
  • The poster reviews:
    • Safe sleep
    • Preventing infant falls
    • Newborns signs of wellness
  • Nurses are to review with parents on admission and continue to reinforce throughout hospital stay

Newborn Safety Poster
Resources with Newborn Signs of Wellness

- **Digital Frames** in patient’s room were revised to include information on newborn signs of wellness

Parent Education: H.E.L.P. Line

- Use of **H.E.L.P. Line** was encouraged to provide an avenue for communication between families and nursing staff
- Parents were reminded that if they had any concerns about their newborn, to call for assistance
Parent Feedback-Initial Push

- **Rounding** by hospital leaders to ask parents if they were educated on newborn signs of wellness (n=86)

![Graph showing evaluation of patient learning outcomes]

- **Parent Feedback-Current**

- **Ongoing Rounding** by hospital leaders to ask *all* parents if they have been educated while in the hospital on newborn signs of wellness:

  *2016: >9000 patients=95.2%*
**Next Steps**

- Promote safe skin-to-skin in all patient care areas
- Continue to monitor patient outcomes
- Provide ongoing education with staff and include physicians

**Summary**

- Newborn safety is one of our highest priorities at Sharp Mary Birch Hospital for Women & Newborns
- Skin-to-skin has been shown to be very beneficial to both mother and newborns
- It is vital that parents are taught how to practice safe skin-to-skin with their newborns
- Teaching parents simple signs of newborn wellness helps them understand what to look for to ensure a safe start while skin-to-skin
References

- AWHONN Practice Brief #5 (2016). Immediate and Sustained Skin-to-Skin Contact for the Healthy Term Newborn after Birth.