Skin to Skin Safety: Reducing the Risk of Sudden Unexpected Postnatal Collapse (SUPC)

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Miller Children’s & Women’s Hospital, Long Beach
OBJECTIVES:

- Describe Sudden Unexpected Postnatal Collapse (SUPC)
- Review safe skin-to-skin practices to prevent SUPC
- Identify methods to monitor babies during skin-to-skin contact
Acknowledgements:

- Los Angeles Regional Hospital Breastfeeding Consortiums
- Providence Holy Cross Hospital
- Sharp Mary Birch, San Diego
- Community Perinatal Network
What is SUPC?

- Depends on how it’s defined.....
Inconsistent Definition

- **SUPC**: Sudden unexpected postnatal collapse
- **eSIDS**: Early sudden infant death syndrome
- **ALTE**: Apparent life threatening event
- **SUDI**: Sudden unexpected death in infancy
- **SUEND**: Sudden unexpected early neonatal death
- **ENSUD**: Early neonatal sudden unexpected death
- **ESUDI**: Early Sudden Unexpected Death in Infancy
Sudden unexpected infant death (SUID) is the death of an infant less than 1 year of age that occurs suddenly and unexpectedly, and whose cause of death is not immediately obvious before investigation.

3 types:
- Sudden Infant Death Syndrome (SIDS)
- Unknown Causes
- Accidental Suffocation and Strangulation in Bed (ASSB)

CDC
Sudden unexpected postnatal collapse (SUPC) is the sudden collapse of an apparently healthy infant within the first days of postnatal life. (>35 weeks gestation, 10 minute Apgar >7, considered healthy who collapse suddenly & unexpectedly within the first postnatal week.)

Herlenius & Kuhn, 2013
SUPC Etiology

- SUPC – SIDS Analogous Mechanisms & Risk Factors
  - SIDS – “triple risk” hypothesis underlying genetic or developmental predisposition
  - Infant Vulnerability
  - Development
  - Environment
  - Case of death unknown
  - Deaths in 1st week often not included in SIDS databases

- SUPC is associated with prone position/skin-to-skin/cobeding in 74% of reported cases.

Herlenius & Kuhn, 2013
Incidence

Published reported cases vary—
2.6 to 133 cases/100,000

Criteria varies:
- Definition
- Inclusion criteria
- Exclusion criteria

Sweden, France, England, Germany, Austria, Italy, US/NYC

Davanzo, et al., 2015,
Herlenius & Kuhn, 2013
Maya Angelou

“I did then what I knew how to do. Now that I know better, I do better.”
Outcomes:

- Half of the infants die
  - No etiology found

- Survivors half have neurological sequela
  - Developed hypoxic-ischaemic encephalopathy (HIE)
  - Hypothermia treatment successful in some cases

Pejovic & Herlenius, 2013
Herlenius & Kuhn, 2013
Occurrences:

- 1/3 during the first 2 hours of life
- 1/3 between 2 and 24 hours of life
- 1/3 between 1 and 7 days of life

Herlenius & Kuhn, 2013
Cases Reviewed:

- ≥ 34 or 35 weeks or greater
- Normal weight
- No congenital anomaly or other issues
- “Good condition”
- Apgar of 7 or 8 at 5 minutes
- No evidence of resuscitation beyond suction of the airway
Common Denominators:

- Within 2 hours of birth
- Baby PRONE or side position on mother
- Baby covered head not visible
- Mother supine
- Mother primiparous
- Mother and infant were not observed during the initiation of skin-to-skin & 1st breastfeeding
- Parents left alone with baby during first hours after birth
- Mother distracted with electronic device(s)

Pejovic & Herlenius, 2013
Herlenius & Kuhn, 2013
Skin to Skin Contact

Benefits

- Recommended for all healthy term newborns due to physiologic and bonding benefits which include:
  - Regulation of infant’s temperature & prevention of hypothermia
  - Neonatal blood glucose regulation and prevention of hypoglycemia
  - Initiation and maintenance of exclusive breastfeeding and enhanced milk production
  - Enhance the mother/infant relationship

- Skin-to-Skin contact should be done immediately after birth until the first feeding at the breast has been achieved (AAP, 2012)
What Do We Know?
Risk Factors:

- Babies vulnerable during transition
  - Prone position
  - Head covered
  - First time breastfeeding attempt

- Mother
  - Supine
  - Primiparous
  - Obese
  - Left alone (no RN supervision)
  - Tired or/and medicated (analgesia, sedated, Magnesium Sulfate)
  - Mobile devises — texting / social media
  - Bedsharing
What Should We Do?
AWHONN (2010)

- 2 nurses should be in attendance until the critical elements for both patients are met
  (1 nurse for the mother & 1 nurse for the baby).
- After the critical elements are met and when conditions of mother and baby are determined to be stable, 1 nurse can care for both the mother and the baby.

AAP/ACOG Guidelines for Care (7th ed)

- The nursing staff in the labor, delivery, recovery, and postpartum areas should be trained in assessing and recognizing problems in the newborn.
Recommendations:

1. Safe early skin-to-skin (SSC) in the delivery room
2. Safe breastfeeding establishment in the first days of life
3. Secure positioning of the infant during sleep

Herlenius & Kuhn, 2013
Safe Early Skin-to-Skin (SSC) In The Delivery Room

Continuous surveillance
One caregiver focused on the baby during the first postnatal hours

- Always have a caregiver (nurse) in the room
- Position self to see mom & baby
- Reduce the risks of distractions (nurse & mother)
- Assessment ongoing (NRP) & continue throughout the recovery period

- Infant: breathing, activity, color and tone
Observe correct & safe positioning
- Tummy to tummy / chest to chest
- Nose free
  - uncovered by breast tissue
  - Uncovered by blanket
- Head & neck aligned
All newborn infants should be placed in supine position within the first few hours after birth are emphasized in the reports of SUPC and in the guidelines to reduce the risk of SIDS. 

Nurses need to “model” Safe Sleep behaviors and continuously educate parents to place the baby in the crib / bassinette on the back after feeding.
Perinatal Patient Safety

Kathleen Rice Simpson:
- MCN-July/August 2015
  - Newborn Safety in the Hospital
  - Common Sense Approaches to Newborn Safety

- MCN-November/December 2015
  - Nurse Staffing and Care During the Immediate Postpartum Recovery Period
Tools
Supine - when the infant is placed on its back and infant were to spit up and take a breath, the spit would go with gravity which leads to the esophagus—stomach, not against gravity up to trachea.

Prone/side - when infant is placed on its side on face down, now lungs are on the bottom and if the infant spits up and takes a breath, spit again would go with gravity but this time trachea is on bottom and they are at higher risk of aspiration.
Checklists

Birth Kangaroo Care Competency Checklist

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Complete</th>
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<tbody>
<tr>
<td>Step 1</td>
<td>Inform parents and discuss the process of birth Kangaroo Care</td>
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<tr>
<td>Step 2</td>
<td>a. Lift the mother’s gown so her abdomen is exposed, or if gown is on backwards, open the gown.</td>
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<tr>
<td>Step 2</td>
<td>b. Place a warm blanket over her abdomen.</td>
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<tr>
<td>Step 3</td>
<td>In the first minute of life the following events should occur:</td>
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<td>a. Place the nude infant supine on the blanket on the mother’s abdomen so that the infant’s head is at or above the mother’s umbilicus or the infant can be placed transverse across the mother’s lower abdomen.</td>
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<td>b. Place mom semi-upright (about 30-40 degrees inclined).</td>
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<td>Step 4</td>
<td>a. Bath suction the mouth and nose only as necessary for meconium.</td>
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<td>Step 5</td>
<td>a. Once cord is cut, lift infant up and remove wet blanket that infant was lying on and dry mother’s abdomen with it.</td>
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<tr>
<td>Step 5</td>
<td>b. Turn infant prone and place on mother’s abdomen or between breasts.</td>
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<td>Step 5</td>
<td>c. Assess the infant white he/she is on the mother’s abdomen.</td>
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<tr>
<td>Step 5</td>
<td>d. Assign the 5 minute Apgar score.</td>
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<td>Step 5</td>
<td>e. Place a diaphragm or infant and cover the infant’s back with a receiving blanket folded into fourths.</td>
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<td>Step 5</td>
<td>f. Be sure that the infant’s shoulders are flat and not constricted throughout skin-to-skin contact with the parent.</td>
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<td>Step 6</td>
<td>a. DO NOTHING. Allow time for the infant to spontaneously crawl towards the breasts (takes 20-50 minutes).</td>
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<td>Step 6</td>
<td>b. Explain to the mother that the infant should remain on her abdomen for the first 60-90 minutes of life.</td>
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<tr>
<td>Step 6</td>
<td>c. Observe infant’s progress toward breast (the 9 insteptausal stage) and comment to mother on how clever is her babys.</td>
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<tr>
<td>Step 7</td>
<td>a. Infant’s hand carries breast, moulching action begins.</td>
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<tr>
<td>Step 7</td>
<td>b. Comment to mother that these actions are signs of breastfeeding readiness, infant’s natural instincts, and infant’s intution. They are pre-feeding behaviors.</td>
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<tr>
<td>Step 7</td>
<td>c. Infant will crawl to approach the breast. Again inform mom that this is exactly what should occur.</td>
<td>✔</td>
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<tr>
<td>Step 7</td>
<td>d. Infant will spontaneously lunge at breast and attempt to latch onto nipple. It may take 2 or 3 attempts before a successful latch is achieved. DO NOT HELP! A spontaneous latch provides a secure, leak-free, and pain-free latch.</td>
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<tr>
<td>Step 7</td>
<td>e. Listen for air talks and watch chest rise and fall with swallows and confirm swallowing movements in neck.</td>
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<tr>
<td>Step 8</td>
<td>a. Nose (and mouth if not sucking) uncovered by breast tissue.</td>
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<tr>
<td>Step 8</td>
<td>b. Face of infant is visible.</td>
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<tr>
<td>Step 8</td>
<td>c. Neck is straight, not bent forward or backward.</td>
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<tr>
<td>Tube Top for Post-partum Kangaroo Care</td>
<td>1. Before the KC session begins, instruct the mother to wear the tube top with nothing underneath. Over the tube top she may wear a blouse or robe that opens in the front.</td>
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<tr>
<td>Tube Top for Post-partum Kangaroo Care</td>
<td>2. Lower the tube top and properly place the baby in Kangaroo Position (*), between the breasts, and well flexed in “sniffling position.”</td>
<td>✔</td>
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<tr>
<td>Tube Top for Post-partum Kangaroo Care</td>
<td>3. Lift the tube top up covering the baby up to the ear providing full support to the body, neck, and head.</td>
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<tr>
<td>Tube Top for Post-partum Kangaroo Care</td>
<td>4. Make sure the size of the tube top is appropriate: tight enough to provide the baby with full body support and containment, and loose enough to facilitate breathing.</td>
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<tr>
<td>Tube Top for Post-partum Kangaroo Care</td>
<td>5. Mother may get up and walk around while providing KC as the tube top will hold the baby in place.</td>
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</table>

Assessing the Infant’s Tolerance to Birth KC

1. The infant is pink (perhaps has mild arterial oxygen), NOT PALE, GRAY, BLUE.
2. The respiratory effort is easy, no audible grunting or visible intercostal retractions.
3. The infant is alert, demonstrating feeding cues or the nine stages of instinctual behavior, or sleeping IN SAFE POSITION on the mother’s abdomen/chest.
4. Well-fed posture with good tone, NOT LIMP OR FLACCID.

Documenting the Birth KC Session

1. Length of Birth KC session including starting and ending time.
2. Did the baby feed during KC? If yes, write type and length/amount of feed.
3. Infant’s tolerance of KC.
4. Chart infant temperature at end of KC.
5. Chart maternal tolerance and comments during KC.
6. Chart “Step 9 of Baby Friendly completed.”

©2010, 2012 United States Institute for Kangaroo Care (www.kangarooareusa.org)
SAFE POSITIONING FOR SKIN-TO-SKIN CONTACT

- Baby’s face can be seen, both nose and mouth are uncovered
- Baby’s head is slightly tilted up and turned to one side
- Baby’s neck is straight, not bent
- Baby’s shoulders are flat against mom
- Baby is chest-to-chest with mom
- Baby’s chest movements can be felt with breathing
- Baby’s knees are bent and up
- Baby’s back is covered with a blanket and tucked under mom
- Baby’s skin is pink and warm
- Mom is in a reclining position, not flat
- Both mom and baby are checked on while sleeping

www.thenewbornbaby.com
Observation Checklist

**Figure 1.** Checklist for Newborn Infants in the First 2 Hours of Life, Particularly during Skin-to-Skin Contact.

<table>
<thead>
<tr>
<th>Parameters to be Assessed or Events to be Registered</th>
<th>10 min&lt;sup&gt;a&lt;/sup&gt;</th>
<th>30 min</th>
<th>60 min</th>
<th>90 min</th>
<th>120 min</th>
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<tbody>
<tr>
<td>1. Infant positioned with visible and unobstructed mouth and nose (Yes/No)</td>
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<td>2. Pink color (skin and/or mucous membranes) (Yes/No)</td>
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<td>3. Normal breathing (no retractions or grunting or flaring of the nares) (Yes/No)</td>
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<td>4. Normal respiratory rate: 30-60 breaths/min (Yes/No)</td>
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<td>5. Normal $\text{SpO}_2 &gt; 90%$ (if deemed necessary) (Yes/No)</td>
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<td>6. Subaxillary temperature at 60 and 120 minutes after birth (Normal range: 36.5°C-37.5°C)</td>
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<td>7. Mother never left alone with her infant (Yes/No)</td>
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<td>First breastfeeding attempt (time)</td>
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<td>Comments</td>
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</table>

Davanzo, et al., 2015
Advice to Health Care Professionals: First 2 Hours of Life

- Do not leave mothers unattended, especially if primigravidas.
- Ensure (and verify) appropriate infant position during skin-to-skin contact (SSC), with nose and mouth uncovered and well visible.
- The prone position should be accepted if the infant is chest-to-chest (not over a breast, between breasts, or over the abdomen), with the head turned to one side, the neck straight, and mouth and nose uncovered.
- Prone position of the newborn should be accepted only during supervised SSC.
- Avoid SSC when mothers have been given analgesics and/or appear tired unless staff can provide continuous monitoring of the mother-newborn dyad.
- First breastfeeding attempt should be supervised.

Davanzo, et al., 2015
Advice to Health Care Professionals: After the First 2 Hours of Life

- Bed sharing should be discouraged, if the mother is sleepy/sleeping and the mother-newborn dyad is unattended.
- Babies found bed sharing with a sleepy/sleeping mother should be placed in their cots. (bassinets)
- Side and prone position of the newborn should be discouraged. (NOT DONE AAP-2011)
- Prone position of the newborn should be accepted only during supervised SSC.
- Recurrent checks of the mother and the infant are required and, if needed, position of the infant should be corrected.

Davanzo, et al., 2015
Advice to Mothers

- Supine position is recommended when the infant is sleeping in the bassinet or the crib/cot. (Safe Sleep)
- Avoid Do Not (AAP) placing infants in prone/side position.
- Prone position is accepted only during SSC and if the mother is not sleepy/sleeping.
- During SSC, nose and mouth should be visible and uncovered at all times: the head should be turned to 1 side; neck should be straight and not bent; the infant should be chest-to-chest and not over a breast, between breasts, or over the abdomen.
- Avoid distraction, particularly the use of electronic devices such as smartphones, during SSC and breastfeeds.
- If mother feels tired and/or sleepy, the infant should be placed in his or her crib. (bassinet)
- Ask for supervision for first and subsequent breastfeeding attempts.
R.A.P.P.™
Assessment Tool

- Respiratory Effort
- Activity
- Perfusion
- Position

Ludington-Hoe, & Morgan, 2014
## The RAPP™ Assessment

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<tr>
<th>Criteria</th>
<th>Date</th>
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*Ludington-Hoe, & Morgan, 2014*
Strategies to Minimize SUPC Risk

1. Safe positioning education
   a. Educate health care professionals
   b. Educate the new mother (prenatal and in-hospital)
   c. Educate family members / support persons
2. Posters &/or Checklists on room walls
3. “Model” the items on the checklist
4. Nursing staff need to KNOW the risk factors & vigilantly screen (who is not a candidate for SSC or needs additional observation)
5. Develop a routine assessment parameters
6. Continuously monitor the dyad during SSC & breastfeeding in the L/D & Mother/baby units

Ludington-Hoe, & Morgan, 2014
References:


AAP/ACOG (2012). Guidelines for Perinatal Care 7th Ed.


References:


