SKIN-TO-SKIN IN THE OPERATING ROOM (SSCOR) AFTER CESAREAN DELIVERY

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Skint-to-Skin Contact in the Operating Room (SSCOR)

- Disclosures
  - None

- Objectives
  - Identify 5 benefits of SSC
  - Describe a model for practice change
  - Describe a process for implementing SSCOR
  - Identify 3 potential barriers to implementation of SSCOR
Why ?????
Benefits of SSC
- Hospital routines interrupt instinct and adaptation to extrauterine life

Performance measures
- Tied to reimbursement
- Value-based reimbursement: Best care at lowest cost

Maternal satisfaction
What is Skin-to-Skin Contact (SSC)?

- Or is it “kangaroo care”?
Benefits of skin-to-skin (SSC)

- For the baby:
  - The “natural habitat”
  - Colonization of maternal bacteria
  - Physiological
  - Psychological
  - The “4th trimester”
Benefits of SSC

- For the mother
  - Physiological
  - Psychological
- For both
  - Attachment
    - Early sensitive period
      - Biologically primed
    - Increased breastfeeding rates!!
- And Dad too!
Benefits of SSC:

- Improved neurobehavioral adaptation to extrauterine life and self-regulation,
- Decreased stress hormones in the newborn,
- Improved respiratory effort and oxygen saturation,
- Less apnea and bradycardia (Ferber & Makhoul, 2004);
- Epigenetic programming; the effect of the environment on genetic expression, rather than to the DNA itself (Bales, Boone, Epperson, Hoffman & Carter, 2011; Fish et al., 2004);
- Maternal and newborn improved physiologic stability during the vulnerable postpartum period (Phillips, 2013);
Benefits of SSC (con’t):

- Attachment and improved mother-infant interaction in later infancy (Bystrova et al., 2009); and at two years of age (Lundqvist-Persson, 2001);

- Improved child physiologic organization and psychologic control at 10 years (Feldman, Rosenthal, & Eidelman, 2014).

- Improved thermoregulation (Walters, Boggs, Ludington-Hoe, Price, & Morrison, 2007);

- Maternal satisfaction (Dalbye, Calais, & Berg, 2011; Moran-Peters, Zauderer, Goldman, Baierlein, & Smith, 2014);
Benefits of SSC (con’t):

- By providing SSC, the baby moves through nine instinctive stages, culminating in breastfeeding if allowed to do so early after delivery (Phillips, 2013)
- Early newborn recognition of maternal milk odor (Mizuno, Mizuno, Shinohara, & Noda, 2004);
- Improved breastfeeding duration and efficacy (Ferber & Makhoul, 2004; Moore & Anderson, 2007);
Health

- Babies have a decrease in:
  - Obesity
  - Type 1 and 2 diabetes
  - Asthma
  - Atopic dermatitis
  - Childhood leukemia
  - SIDS
  - Infectious disease including: acute otitis media, gastroenteritis, lower respiratory tract infections
  - 72% decrease in hospitalizations as compared to formula-fed infants

Mothers have a decrease in:

- Postpartum hemorrhage
- Postpartum depression
- Breast and ovarian cancer
- Type 2 diabetes
- Autoimmune disease
- Osteoporosis

So, what are we going to do?

This? Or this?
Hospital routines disrupt instinct....

- A baby’s 9 instinctive phases after birth
  - The birth cry
  - Relaxation
  - Awakening
  - Activity
  - Rest
  - Crawling
  - Familiarization
  - Suckling
  - Sleep
Performance Measures
January 1, 2016, the Joint Commission threshold for mandatory reporting of the Perinatal Care performance measure set changed from a minimum of 1,100 births annually to a minimum of 300 births per year.
- That means most of us!
- Indirect measure
WHAT ARE CORE MEASURES?

- The Joint Commission developed Core Measures to standardize a performance measurement system.
- Potentially tied to reimbursement.
- Quality Improvement methodology guides CM.

CORE MEASURE: PC-O5 EXCLUSIVE BREAST MILK FEEDING ADDED IN 2010

**Perinatal Care (PC) core measure set**
- PC-01 Elective delivery
- PC-02 Cesarean birth
- PC-03 Antenatal steroids
- PC-04 Healthcare-associated bloodstream infections in newborns
- PC-05 Exclusive breast milk feeding
- CDC National Survey of Maternity Practices in Infant Nutrition and Care (mPINC score)
  - Biannual survey of maternity practices including SSC rates and timing after Cesarean delivery
  - Direct measure
  - mPINC West Virginia:
    - WV score 2015: 73 out of 100 = 44th place out of 53
    - Increased from 55 in 2007
For Uncomplicated Cesarean Births:

- Are routine newborn procedures (e.g. newborn assessment including Apgar, and cord clamping, identification including foot printing) after uncomplicated cesarean births done while the mother is holding the healthy full-term infant skin-to-skin?

- Approximately how many mothers are encouraged to hold their healthy full-term infants skin-to-skin for at least 30 minutes within two hours after delivery for uncomplicated cesarean births?
mPINC Survey

- Approximately what percentage of healthy full-term breastfed infants are put to the breast for the first time during the specified period after delivery for uncomplicated cesarean births?
  - Within 2 hours after delivery ____%  
  - More than 2 hours – 4 hours after delivery ____%  
  - More than 4 hours after delivery ____%  
  - Total 100%

- Following uncomplicated cesarean births, are healthy full-term breastfed infants routinely taken to the nursery or other separate area for transition (e.g. processing as a pediatrics patient, vital signs, first bath)? (Yes/No)
  - On average, how long is the infant in this transition period?
So, what are we going to do?

This? Or this?
Societal and governmental organizations challenge healthcare professionals to base their practices in current research and utilizing EBP is a mechanism to close the gap between research and practice.

- (Dearholt & Dang, 2014)

- Average time from research to translation/utilization???
Models to assist with development of practice change

- Iowa
- Stetler
- Plan-Do-Act-Check-Act

**John’s Hopkins Nursing Evidence-Based Practice: Model and Guidelines**


- Many more
John’s Hopkins Nursing Evidence-Based Practice: Model and Guidelines
(Dearholt & Dang, 2014)

- Johns Hopkins Center for Evidence Based Practice provides education, information and tools for implementing evidence-based practice and appraising evidence with copyright permission available on website:
John’s Hopkins Nursing Evidence-Based Practice: Model and Guidelines
(Dearholt & Dang, 2014)
John’s Hopkins Nursing Evidence-Based Practice: Model and Guidelines
(Dearholt & Dang, 2014)
Step 1: Recruit interprofessional team

- Nursing
  - Nurses
  - PNP's, NNPs, CRNAs
- Medical Providers
  - OB’s
  - Anesthesia
  - Pediatricians
- CNO
- Others
  - Will differ depending on healthcare organization
Step 2: Develop and refine the EBP question

- What evidence do you need?
  - Safety?
  - Feasibility?

- Framing the question: PICO(T)
  - Patient, Population or Problem
  - Intervention
  - Comparison
  - Outcomes
  - Time (not always used)
Practice Question (Steps 1-5)

- **Step 3: Define the scope of the EBP question and identify stakeholders**
  - SSCOR has broad scope involving multiple healthcare providers, ancillary staff, administration, environment and equipment

- **Step 4: Determine responsibility for project leadership**

- **Step 5: Schedule team meetings**
Step 6: Conduct an internal and external search for evidence

- Internal:
  - Quality improvement data
  - Patient satisfaction
  - Risk management
Evidence (Steps 6-10)

- **External**
  - Position statements from professional/government organizations
    - World Health Organization (WHO) and UNICEF (2009) statement: *Skin-to-skin contact should be initiated immediately after birth in vaginal delivery, and as soon as the mother is alert and responsive after Cesarean birth*
    - Endorsed by:
      - ACOG
      - AAP
      - ABM
      - AWHONN
    - Joint Commission (mPINC)
Evidence (Steps 6-10)

- **Step 7: Appraise the level and quality of each piece of evidence**
  - Johns Hopkins Center for Evidence Based Practice provides tools for appraising evidence with copyright permission available on website:

- **Step 8: Summarize the individual evidence**

- **Step 9: Synthesize overall strength and quality of evidence**
Step 10: Develop recommendations for change in systems or processes of care based on the strength of the evidence

- Strong, compelling evidence, consistent results
  - SSC after vaginal delivery
- Good evidence, consistent results
  - SSCOR
  - Less evidence available for SSC after CS than after VD
  - References for SSCOR provided
- Good evidence, conflicting results
- Insufficient or absent evidence
Translation (Steps 11-18)

- **Step 11: Determine the fit, feasibility, and appropriateness of recommendation(s) for translation path**
  - Risks and benefits assessed
  - Feasibility in context of environment and culture
    - Staffing
    - Physical environment
    - Buy-in of stakeholders

- **Step 12: Create an action plan**
  - Mock-up
  - Pilot run with review of process
Step 13: Secure support and resources to implement action plan

- Staffing
- Anesthesiologists/CRNAs
  - Can be biggest obstacle due to need for immediate access to mother
  - VETO power for all

Step 14: Implement the change

- Constant review of process
  - Debrief after every SSCOR
  - Tweak process after debriefs
Step 15: Evaluate outcomes

SSCOR Project 1st 15 participant dyads:

- Reason for CS:
  - Repeat: 13
  - Primary 2
    - 1 scheduled primary
    - 1 FTP

- Temperature in first 30 min. after delivery (In OR):
  - Range: 97.7 F (36.5 C) to 99.0 F (37.2)

- BW: 2870g – 3980g

- Apgar score:
  - 1 min. 7-9
  - 5 min. all were 9
Step 15: Evaluate outcomes

- Time from delivery to SSC
  - Range: 1.5 min. to 5 min (5 min -> baby with 1 min. Apgar score of 7)
  - Mean: 3 min. 27 sec.

- Time in and out of OR
  - Range: 49 – 94 min
  - Comparison pending

- Time to first BF latch (raw data/no comparison to SSC after vaginal delivery).
  - 11-65 minutes (13 dyads)
  - 1 mother who chose formula feeding
  - 1 mother who terminated SSC early, then formula fed
Maternal Satisfaction

- One item Likert-type questionnaire:
  - How satisfied were you with your skin-to-skin (kangaroo care) experience after your C-section
    - Very satisfied-Somewhat satisfied-Neutral-Somewhat unsatisfied-Very unsatisfied
  - Mean score 4.93
- Comments:
  - Provided at end
Translation (Steps 11-18)

- Step 16: Report outcomes to stakeholders
- Step 17: Identify the next steps
- Step 18: Disseminate the findings
The PI Project: Skin-to-skin in the OR (SSCOR)
- WVU IRB approval obtained

- Pilot PI project
  - Two OBs participated
    - If one of the OBs was delivering a qualified patient, she was approached to participate in SSCOR
  - All other OBs: usual care
Which mothers and babies?

- Mothers
  - Uncomplicated pregnancy
  - Desires SSCOR
  - Awake for surgery
  - Usually routine, repeat scheduled CS

- Newborns
  - Term (39-41 weeks gestation)
  - Expected to be healthy
  - 1 minute Apgar 8 or greater
Process

- Baby delivered and brought to warmer
- If good tone and respiratory effort, baby dried, cap and diaper placed
- To mother; goal 1 minute Apgar
- Baby nurse remains with baby
- Q 15 min. vital signs while in OR; q 30 minutes
SSCOR: The Process

- **Process**
  - Maternal transfer from OR table to bed with baby on chest (dedicated baby nurse)

- **Safety**
  - Dedicated baby nurse
  - “Veto” power
The “tweaks”:
  - Goal of 1 minute changed to allow for:
    - Baby weight, HC, LT
    - Footprints
    - ID bands
  - The transfer of mother/baby as dyad from OR table to postpartum bed:
    - Goal: to keep together
    - Anesthesia vetoed on a few occasions
      - Always allow veto
      - Dad held baby
Identifying next steps (Step 17 of JH model):
  - Baby nurse
  - Increased costs (??)
  - Educating all staff
  - Research
    - Breastfeeding
    - Safety
So, what are we going to do?

This?  Or this?
Potential Barriers to Implementation of SSCOR

- Dedicated nurse for baby in SSC
- Anesthesiologist/CRNA concerns
  - Space
  - Safety
  - Access to mother
  - Monitoring mother
- CS recovery room proximity
- Timing of SSC
  - Newborn assessment
    - NRP: tone and respiratory effort
    - What tasks must be done prior to SSC
Potential Barriers to Implementation of SSCOR

- **Duration of SSC**
  - Recovering mother with baby on chest
    - ECG leads
    - Fundal checks
    - Other maternal care
  - Baby assessment/tasks
    - RN
    - Pediatrician/PNP
  - Concern for safety
    - Falls
    - Mother with fatigue/narcotics
    - Safe sleep
Feedback from Mothers: Maternal Satisfaction

- “KC is the best way for a parent to share warm healthy energy with their child. Great experience.”
- Loved having KC during my CS. It made it seem more like a birth than just surgery. The bonding was great for all of us and I was so happy with how fast baby breastfed.”
- “My husband and I loved that I was able to see and hold our daughter right after birth. Amazing experience!”
- “It definitely helped to be able to see my daughter up close and hold her after surgery. Holding her on my chest helped to calm my nerves more and started the bonding process sooner – something I missed out on with my son 4.5 years prior.”
THIS is Why!!!!
So, what are we going to do?

This?

Or this?

(Count them!)
Need help?:
- Email Helena: hbrady@wvumedicine.org
- Call: (C)434-806-5111
- Call: (W)304-350-3406


References


References


References


References


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