Mother-Baby Dyad Care
IMPLEMENTATION TOOLKIT
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Promotion of Mother-Baby Dyad Care

INTRODUCTION

The practice of separating a newborn from his mother soon after birth is common. This is a variation from an evolutionary perspective considering a newborn’s survival depended on close and continuous contact with his mother. Current hospital routines often significantly disrupt the early maternal-infant relationship and may, in fact, be harmful. Newborn care practices often developed out of convenience and efficiency and have never been validated. Many evidence based newborn care practices are not only beneficial, but also have no harm associated with them.

Mother-baby dyad care, including skin-to-skin contact of healthy infants and mothers from birth and as much as possible in the early postpartum days is an essential component of evidence-based maternal-newborn care. The health of infants, mothers and our health care system are directly and indirectly affected by these practices. Please note that recommendations may require modification to meet the needs of the pre-term infant.

Important benefits of caring for the mother and baby together include utilizing skin-to-skin care to reduce heat loss and promote thermoregulation, mother-infant attachment behaviours and increased breastfeeding success.

In 2000, the Family-Centred Maternity and Newborn Care: National Guidelines were published. The guidelines state that:

“During the immediate postpartum period, the mother and newborn, within the context of their family or personal support, should be viewed as a unit. Whenever possible, disruption of the close parent-infant relationship during the crucial few hours following birth is to be avoided and direct physical contact between the baby, mother, and father strongly encouraged. The parent-infant bond — the first step in the infant’s subsequent attachments — is formative to a child’s sense of security and has long-lasting effects. Indeed, the benefit to the parents should not be underestimated: this early physical contact with the baby affirms their sense of accomplishment and promotes their self-confidence as parents. Keeping babies and parents together should clearly be of the highest priority.”
BACKGROUND

In June, 2008 the Maternal-Newborn Advisory Committee (M-NAC) was convened by the Provincial Council for Children’s Health (now PCMCH) and the MOHLTC to address system issues related to maternal-newborn care in Ontario. M-NAC has initiated several work groups to address a number of system issues that affect access to maternal-newborn services.

M-NAC’s Access Work Group recommended strategies to achieve a coordinated system of maternal and neonatal services that will provide equitable access to timely, high quality, evidence-based, family-centered care at the appropriate level for all pregnant women and newborns in Ontario.

The Access Work Group identified the need for consistent practice in the area of support for mother-baby dyad care. The Work Group recommended that separation of mom and baby, often due to admission of baby to a Special Care Nursery, should be minimized.
Recommendations

OF THE MOTHER-BABY DYAD CARE WORKGROUP*

The following recommendations support evidence-based clinical practices in promoting the care of the infant together with the mother.

Recommendation #1

Initiate continuous, uninterrupted skin-to-skin care (ssc) immediately post birth and continue for a minimum of 2 hours. Encourage ssc throughout postpartum stay with mother or support person.

Method

Upon birth place infant, chest down, on mothers chest or abdomen. Dry with warm towels then discard. Apply dry cap to infant’s head. Cover mother and baby with pre-warmed blankets. Diaper is optional. SSC can be provided by a support person in lieu of mother if she is unable to participate i.e. in operating room during a cesarean section.

Evidence /Rationale

Cochrane Review 2009; “Early Skin-to-skin Contact for Mothers and their Healthy Newborn Infants Review”, is a comprehensive evidence source for the following benefits of early skin-to-skin contact for the newborn:\n
- Stabilizes the physiologic parameters: heart rate, respiratory rate, oxygen saturation, oxygen consumption, apnea and bradycardia spells
- Maintenance of newborn body temperature
- Regulates blood glucose levels
- Decreased pain during invasive procedures* for example, Vitamin K injection
- Reduces crying
- Increases breastfeeding success
- Improves mother -baby interaction

The World Health Organization (WHO), in 1998, recognized ssc as an essential aspect of newborn care.\n
Implementation Steps

Incorporate skin-to-skin care into practice standards, policies, procedures and documentation in the patient care record.

Develop and implement an educational initiative as required learning for front line health care providers. Understanding the benefits of ssc is a pre-requisite for implementing practice change. Include the development of local champions from within individual hospitals.

Engage stakeholders at every site including physician (all disciplines), midwife, and nurse champions. Organizational support for local champions to engage obstetrical care providers in discussions that share evidence and challenge commonly held beliefs about ssc.

*These recommendations may require modification in order to meet the needs of the pre-term infant.
Recommendation #2

Maintain skin- to- skin contact while doing assessments and interventions. For example, observation and assessment of grunting can be done while infant is skin-to-skin as can administration of Vitamin K & Erythromycin, and heel pricks for blood glucose screening (see number 1).

<table>
<thead>
<tr>
<th>Evidence /Rationale</th>
<th>Implementation Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine newborn care practices are often performed under a radiant warmer. For example: examinations, blood sampling. This interrupts ssc.</td>
<td>Management support to change organization policy, procedures and practice in order to support ssc.</td>
</tr>
<tr>
<td>Routine assessments and interventions can be done during ssc. For example, medication administration, vital sign assessment, oxygen saturation measurement and free flow oxygen can all be done without disrupting ssc.</td>
<td>Support required to increase confidence and competence for care providers, to assess and care for newborn during ssc.</td>
</tr>
<tr>
<td>Some procedures can also be delayed, so that initial bonding is not interrupted.</td>
<td>Engage clinical leadership at sites to support / teach assessment of variations in transition, including mild respiratory distress, such as grunting.</td>
</tr>
<tr>
<td>Vitamin K should be given within six hours after birth(^\text{vii}) Erythromycin ointment should be given within one hour of birth(^\text{viii})</td>
<td>Bring specialists to the bedside to support nurses to develop their assessment skills. For example: SCN nurse, RRTs, pediatrician, anesthesiologist.</td>
</tr>
<tr>
<td>It is not uncommon for healthy newborns to have grunting respirations during their first 4 hours of life. This usually resolves spontaneously within 2 hours of birth(^\text{ix}) SSC is beneficial for cardio-respiratory stabilization therefore grunting infants will benefit from ssc.</td>
<td></td>
</tr>
</tbody>
</table>
Recommendation #3

Avoid unnecessary interventions, particularly those that may result in complications requiring transfer to the nursery.

- Suction according to Neonatal Resuscitation Program (NRP) standards
- Follow Canadian Pediatric Society (CPS) position statement for screening at-risk newborns for low blood glucose. Perform glucose testing at bedside to prevent separation of baby from mother.

### Evidence /Rationale

The NRP guidelines acknowledge that at least 90% of newborns are vigorous term babies who do not need to be separated from their mothers after birth for the initial steps of resuscitation. Initial steps of resuscitation include:

- Providing warmth through direct skin-to-skin contact with the mother
- Drying the skin, stimulating breathing and repositioning the head to open the airway.
- Clearing mucous from the upper airway by wiping the baby’s mouth and nose
- Ongoing observation of breathing, heart rate, activity and colour

Suctioning, in the absence of indications, is harmful because it may lead to complications including: apnea, bradycardia, trauma, and oral aversion. These complications may require transfer to the nursery, resulting in separation of mother and baby.

NRP guidelines recommend that, if the airway is blocked by mucous, the care provider should wipe the nose and mouth with a towel or do brief, gentle suctioning of the mouth and nose with a catheter. Vigorous babies, born with meconium present in the amniotic fluid, should be treated the same way.

Avoid suctioning vigorously or deeply. Stimulating the posterior pharynx can produce a vagal response, resulting in severe bradycardia or apnea.

A non-vigorous baby, born with meconium present in the amniotic fluid, should be suctioned through a laryngoscope then endotracheal tube.

Oral & pharyngeal suctioning is a contributing factor for oral aversion. This may disrupt the initiation of feeding by breast or bottle. It is easier to prevent oral aversion than it is to treat it.

Infants at risk for hypoglycemia who are asymptomatic should have their first glucose check at 2 hours of age.\textsuperscript{x}

### Implementation Steps

- Suctioning policy/practices.
- Education module for all regarding routine suctioning. Education for all practitioners regarding CPS recommendations.
Recommendation #4

Manage transition using assessment skills recommended in the NRP Guidelines \[xii\].

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<tr>
<td>The NRP guidelines recommend that every birth should be attended by at least 1 person skilled in neonatal resuscitation. This person’s only responsibility should be the management of the newborn. “At every delivery, there should be at least 1 person who can be immediately available to the baby as his or her only responsibility and who is capable of initiating resuscitation. Either this person or someone else who is immediately available should have the skills required to perform a complete resuscitation, including endotracheal intubation and administration of medications. It is not sufficient to have someone ‘on call’ (either at home or in a remote area of the hospital) for newborn resuscitations in the delivery room.” [xiii] The NRP guidelines further recommend that, when a high risk delivery is anticipated, at least 2 persons should be present just to manage the baby. One of these people should be able to perform a full resuscitation and 1 or more to assist. Skills in neonatal resuscitation are obtained through the Neonatal Resuscitation Program (NRP) coordinated by the Canadian Paediatric Society and the Canadian Heart and Stroke Foundation. Training and registration at the Provider or Instructor level and periodic re-registration are recommended for all personnel likely to care for babies immediately after birth. The efforts by institutions to provide on-site programs to achieve this goal should be supported.</td>
<td>Leadership team to implement policy to support this practice.</td>
</tr>
</tbody>
</table>
**Recommendation #5**

Bring the resources (expertise & equipment) to the infant instead of the infant to the resources. Clinical therapies or treatments for the baby should be carried out at the mother’s bedside whenever possible.

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<tr>
<td>Newborns with symptoms of mild respiratory distress, and hypoglycemia benefit from ssc. Assessment of these conditions at the mother’s bedside enables the infant to stay with the mother. The skills required to support this practice can be learned by birthing and postpartum nurses.</td>
<td>Leadership team to implement policy to support this practice. Support required to increase confidence and competence for care providers to assess and care for newborn during ssc.</td>
</tr>
<tr>
<td>During the initial stages of resuscitation, strive to perform this in the presence of parents. Room layout and space can facilitate this.</td>
<td>Consultant assessment to take place in mother’s room. (SCN nurse, paediatrician, respiratory therapist). Flex / align staffing resources to reflect location of care / census / acuity.</td>
</tr>
<tr>
<td>Stable newborns that require phototherapy or prophylactic IV antibiotics are often transferred to the nursery. These babies would be better off rooming-in with mom while receiving these treatments. This requires increased workload for the postpartum nurse or flexible staffing models which would enable the SCN nurse to go to the postpartum unit to manage the treatment, i.e. intravenous.</td>
<td>Assign local clinical champions and nursing education and resources as necessary to provide care of infant at mother’s bedside. Consultant responsibility to include mentoring role.</td>
</tr>
</tbody>
</table>
| Refer to Access to Care Level II admission guidelines for management of jaundice (IPC guidelines) | Educate staff about how infants can receive scc and bedside care for:  
• APGAR score  
• weighing & measuring  
• resuscitation  
• phototherapy  
• saline locks  
• heel prick blood sampling  
• antibiotic therapy |
| Physical layout of birthing rooms and cesarean/operating rooms will determine ability to resuscitate infant in presence of mother/support person. | Develop portable ‘tool kits’ with equipment required for infant care in mother’s room. |
Recommendation #6

Incorporate delayed cord clamping for a minimum of 2 minutes after birth into day-to-day practice.

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<tr>
<td>The practice of delayed cord clamping is easily integrated into a gentle birth culture that also promotes ssc and discourages separation of mom and baby.</td>
<td>Develop local champions to initiate discussions that share evidence and challenge common beliefs among obstetrical care providers about delayed cord clamping.</td>
</tr>
<tr>
<td>Early cord clamping is usually defined as within the first 10 seconds. Delayed cord clamping is defined by the SOGC as up to 2 minutes, the average amount of time it takes for the cord to stop pulsating.</td>
<td>Develop informed consent for families planning stem cell collection when the In utero method of collection will be used.</td>
</tr>
<tr>
<td>Hutton and Hassan’s systematic review and meta-analysis of late vs early cord clamping revealed that delayed cord clamping:</td>
<td>Explore the possibility of using the Ex utero collection methods for families who wish to collect stem cells and also choose delayed cord clamping for their newborn.</td>
</tr>
<tr>
<td>• Is beneficial for the neonatal period and beyond. It results in a decreased risk of anemia and decreased risk of iron deficiency during the first 3 months after birth.</td>
<td></td>
</tr>
<tr>
<td>• Showed a non-significant finding of polythcythemia (increased red blood cells)</td>
<td></td>
</tr>
<tr>
<td>• In the preterm population, was found to decrease the incidence of anemia, sepsis, and intraventricular hemorrhage. No difference in outcomes when the infant is placed on mother’s chest vs held below the introitus in delayed clamping results, therefore placing the infant on the mother’s chest without the cord clamped is acceptable practice.</td>
<td></td>
</tr>
<tr>
<td>Considerations for stem cell collection</td>
<td></td>
</tr>
<tr>
<td>The SOGC describes two techniques for collecting cord blood from the umbilical vein for stem cells:</td>
<td></td>
</tr>
<tr>
<td>• In utero – before the placenta is delivered (quicker method and most common technique). This method is not compatible with delayed cord clamping.</td>
<td></td>
</tr>
<tr>
<td>• Ex utero – after the placenta is delivered (more time consuming and less commonly practiced). This is the only technique that is compatible with delayed cord clamping.</td>
<td></td>
</tr>
<tr>
<td>Considerations for cord blood gas collection</td>
<td></td>
</tr>
<tr>
<td>The SOGC recommends that arterial and venous cord blood gasses be routinely collected for all births. Although cord gases should be collected immediately after birth, the SOGC acknowledges that delaying cord clamping until the cord stops pulsing (average 2 minutes) does not interfere with the collection of cord blood gases. The only exception is a depressed baby who should have cord gases drawn immediately.</td>
<td></td>
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</table>
### Recommendation #7

Use of respite / observation nurseries (separate spaces in post partum areas) should be discouraged unless maternal medical indications or for safety.

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<tr>
<td>“Keeping babies and parents together should clearly be of the highest priority. Institutional policies can at times restrict this contact, so flexibility should be the guiding principle”&lt;sup&gt;xxiii&lt;/sup&gt;</td>
<td>All hospitals should develop strategies to avoid separation of mother and baby dyads. Provide information to families prenatally to educate them about the importance of dyad care and rooming-in.</td>
</tr>
<tr>
<td>Mother and baby will benefit when the support person stays in hospital with them. The support person will begin bonding with baby which will increase attachment and parenting behaviours.</td>
<td></td>
</tr>
<tr>
<td>Mothers who room-in with their baby at night report better quality of sleep compared to mothers whose baby slept in the nursery.&lt;sup&gt;xxiv&lt;/sup&gt;</td>
<td></td>
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</tbody>
</table>
Implementation of the Mother-Baby Dyad Workgroup Recommendations

KEY COMPONENTS OF MOTHER- BABY DYAD CARE

This diagram demonstrates the key factors that support successful implementation of mother-baby dyad care for healthy newborns.
IMPLEMENTATION GUIDE

This guide will assist organizations to implement the evidence-based clinical practices that promote the care of the infant together with the mother.

Create implementation team

| a) Obtain support from senior leadership to implement mother-baby dyad care. Align initiative with the organizations strategic aims and culture. |
| b) Recruit and engage champions from a multidisciplinary group of stakeholders who are influential and respected. |
| Team members to consider: |
| • Director of Maternal-Newborn Program |
| • Clinical managers from birthing unit, mother-baby unit and special care nursery/NICU |
| • Medical chiefs of Obstetrics, Pediatrics, Family Practice, Anesthesiology |
| • Midwife |
| • Clinical Educator |
| • RN/RPN representatives from Birthing Unit, Mother-Baby Unit and Special Care Nursery/NICU |
| • Respiratory Therapist |
| • Information Technologist |
| • Decision Support |
| • Operating Room and Recovery Room nurse and physician if applicable to setting |
| • IV/Phlebotomy team if applicable (for newborn blood collection) |
| c) Establish meeting schedule |
| • Communicate meeting dates and times |
| • Facilitate attendance by team members, i.e. scheduling |
| • Discuss Mother-Baby Dyad Toolkit |
| d) Establish project goals, including target dates for each stage of implementation. |

Assess the situation

| a) Review and discuss PCMCH recommendations for mother-baby dyad care. |
| b) Conduct baseline assessment of current situation, including current practices, policies and procedures relating to: |
| • Attendance at birth: vaginal birth, cesarean birth, high-risk birth |
| • Cord blood collection for cord blood gases and stem cell banking |
| • Care of the healthy newborn |
| • Use of infant warmer |
| • Initial care of the healthy newborn, including late preterm and preterm: |
| o Umbilical cord clamping |
| o Routine suctioning |
| o APGAR |
| o Skin-to-skin care |
| o Physical assessment, including weight |
| o Administration of vitamin K and eye prophylaxis |
| o Timing of initial feeding |
o Cardiorespiratory monitoring
o Timing of initial bath
  - Admission criteria for level 2 & 3 nurseries
  - Neonatal resuscitation protocol, including requirements for NRP providers presence at birth, cardiorespiratory monitoring, oxygen administration, indications for suctioning
  - Postpartum care of the newborn: rooming-in, IV saline lock, phototherapy
  - Presence and utilization of respite or observation nursery on postpartum unit
  - Documentation on patient care record that will support audits and data collection for:
    o Initiation of first feeding within 1 hour of birth
    o Initiation of breastfeeding within 30 minutes of birth
    o Initiation of skin-to-skin contact immediately after birth and throughout the postpartum hospital stay
    o Duration of skin-to-skin contact
    o Timing of cord clamping: immediate, >1 minute, >2 minutes
    o Specialized care providers brought to the baby when required, i.e. respiratory therapy, nursery nurse, pediatrician
  - Management of variations in transition, including response to intervention and treatment for: hypothermia, nasal flaring, grunting, transient tachypnea, hypoglycemia, and antibiotic prophylaxis.
  - Management of the late preterm and preterm infant
  - Admission rates to Level 2 & 3 nurseries for in-born term newborns
  - Admission rates to Level 2 & 3 nurseries for in-born newborns with a diagnosis of hypothermia, respiratory symptoms, hypoglycemia and hyperbilirubinemia
  - Other relevant factors
c) Identify gaps between current practice and M-BD recommendations
   a) Identify hospital policies that require revision or development in order to support M-BD care.
   b) Identify impact of infrastructure on goals. Consider: physical environment, resources (equipment, staffing, financial), communication, information technology, risk management
c) Identify internal and external stakeholders.
d) External stakeholders may include: childbirth educators, public health, cord blood bank
e) Identify data that is readily available and establish strategy to collect and report this. Consider:
f) Documentation on the patient care record
g) Internal benchmarking reports
h) Identify data not readily available and, where feasible, a strategy to collect and report this.
i) Develop comprehensive implementation plan with timeline and benchmarks.

Plan strategy for change

a) Identify leadership support required for implementation phase.

b) Identify and engage clinical champions who will be influential and respected and therefore effectively drive change.

c) Revise or develop policies as needed.

d) Communicate with external partners about practice change.

e) Develop education to support practice change. Methodologies to consider:
   - Staff meetings
   - On-line tutorial
   - Face-to-face education: in-service or workshop
- Self-learning module
- Peer-to-peer mentoring
- Pre-natal education for families, i.e. brochure, poster

f) Identify factors that will support practice change. For example:
   - Engage all potential stakeholders early and often
   - Schedule champions and clinicians to enable attendance at meetings and face-to-face education sessions
   - Make education mandatory
   - Make education multidisciplinary
   - Utilize preceptors or champions to role model new practices and provide peer-to-peer support
   - Conduct chart audits
   - During and after implementation provide progress reports to staff, create opportunities for formal and informal discussions
   - Incorporate practice change into orientation program for new staff
   - Inform patients prenatally so they are prepared for their hospital experience, including skin-to-skin care
   - Monitor nursery admission rates of infants greater than or equal to 37 weeks gestation for diagnosis related to cardiorespiratory symptoms, hypothermia, hypoglycemia, risk of sepsis.

   g) Identify factors that may create a barrier for practice change. For example:
      - Fear of change
      - Fear of ‘what if something happens’
      - Attitudes and beliefs about various aspects of mother-baby dyad care, for example, delayed cord clamping, early initiation of breastfeeding, skin-to-skin with mother, father or partner, rooming-in 24/7
      - Clinicians or patients lack of knowledge
      - Inadequate support to develop education, revise documentation, collect and analyze data

   h) Develop strategies to overcome barriers. For example, communication, education, realistic time frames

### Implementation

<table>
<thead>
<tr>
<th>Option</th>
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<tbody>
<tr>
<td>a) Identify and engage champions to generate buy-in and influence practice change on the front line</td>
</tr>
<tr>
<td>b) Deliver clinician education</td>
</tr>
<tr>
<td>c) Deliver patient education, for example, brochure or poster. Determine distribution channel, i.e. prenatal clinic, physician’s offices, prenatal tours, prenatal classes.</td>
</tr>
<tr>
<td>d) Influence department culture</td>
</tr>
<tr>
<td>e) Modify documentation on the patient care record to support data collection as per 2 (h).</td>
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<tr>
<td>f) Encourage feedback from front line clinicians to overcome barriers and sustain practice change.</td>
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### Monitor progress

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<tbody>
<tr>
<td>a) Collect and analyze data and audit results on an ongoing basis to sustain practice change.</td>
</tr>
<tr>
<td>b) Share results with clinicians on a regular basis.</td>
</tr>
<tr>
<td>c) Create opportunities for frequent discussion of successes, challenges, and problem-solving.</td>
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<tr>
<td>d) Review results and revise strategies to reach goal and sustain results.</td>
</tr>
<tr>
<td>e) Communicate progress to reinforce benefits of practice change for clinicians and patients.</td>
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</table>

Celebrate milestones!
Teaching Package

This teaching package is designed for use by hospitals implementing mother-baby dyad care.

Contents include a pre-test, slide deck, Breast Crawl video and guide. These items are designed to be used together, either in an in-service or workshop format, or as a self-learning module.

In addition, an audit tool is provided which can be utilized to assess the practice of clinicians before and after implementation of mother-baby dyad care. The audit may be conducted through observation, self-reporting or the patient care record, depending upon the availability of the desired information.
## PRE-TEST

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>TRUE</th>
<th>FALSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skin-to-skin care is the best way to support physiological transition of the healthy newborn.</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>2</td>
<td>Skin-to-skin care should be done continuously during the first 2 hours of life.</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>3</td>
<td>A baby benefits from skin-to-skin contact with its mother only.</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>4</td>
<td>A baby with nasal flaring and grunting should be assessed in a special care nursery setting.</td>
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</tr>
<tr>
<td>5</td>
<td>A newborn who is formula feeding doesn’t need skin-to-skin care.</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>6</td>
<td>Routine suctioning is important to clear secretions at birth.</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>7</td>
<td>Delayed cord clamping causes anemia in the infant.</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>8</td>
<td>Grunting usually resolves spontaneously within a few hours of birth.</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>9</td>
<td>A healthy newborn at risk for hypoglycemia should go to the nursery for glucometer testing.</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>10</td>
<td>Coarse, wet breath sounds are normal early in transition.</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>11</td>
<td>Vitamin K and eye ointment should not be given during skin to skin care.</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>12</td>
<td>Vitamin K should be given within 1 hour of birth.</td>
<td>T</td>
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## PRE-TEST: ANSWERS

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Objective

This workshop will help you to:

Increase your knowledge, skill and confidence to assess and care for healthy newborns using evidence based practice.

Mother-Baby Dyad Care

PRE-TEST
Fact or Fiction?

1. Skin-to-skin care is the best way to support physiological transition of the healthy newborn.
   TRUE

2. Skin-to-skin care should be done continuously during the first 2 hours of life.
   TRUE

Fact or Fiction?

3. A newborn benefits from skin-to-skin contact with its mother only.
   FALSE

4. A baby with nasal flaring and grunting should be assessed in a special care nursery setting.
   FALSE
Fact or Fiction?

5. A newborn who is formula feeding doesn’t need skin-to-skin care.
   FALSE

6. Routine suctioning is important to clear secretions at birth.
   FALSE

Fact or Fiction?

7. Delayed cord clamping causes anemia in the infant.
   FALSE

8. Grunting usually resolves spontaneously within a few hours of birth.
   TRUE
**Fact or Fiction?**

9. A healthy newborn at risk for hypoglycemia should go to the nursery for glucometer testing.  
   **FALSE**

10. Coarse, wet breath sounds are normal early in transition.  
    **TRUE**

**Fact or Fiction?**

11. Vitamin K and eye ointment should not be given during skin-to-skin care.  
    **FALSE**

12. Vitamin K should be given within 1 hour of birth.  
    **FALSE**
Mother-Baby Dyad Care

RECOMMENDATIONS

The Mother-Baby Dyad Care Recommendations Support:

- National Guidelines for Family-Centred Maternity and Newborn Care
- World Health Organization (WHO) guidelines for Postpartum (PP) care of mother and newborn
- Excellent Care for All Act (Ontario 2010)
- Neonatal Resuscitation Program (NRP) guidelines
- Baby Friendly Hospital Initiative (BFI)
- Canadian Pediatric Society (CPS) guidelines
- Society of Obstetricians and Gynecologists of Canada (SOGC) guidelines
What has changed?

**Historically**, a newborn’s survival was dependent upon close and continuous maternal contact.

**Modern day** hospital routines often disrupt the early maternal-infant relationship for the purpose of convenience and efficiency, and have never been validated.

Mother-baby dyad care

What does it mean?

Mother-baby dyad care is caring for the mother and baby together, including skin-to-skin contact of healthy infants and mothers, from birth and as much as possible in the early postpartum days.
Benefits of Mother-Baby Dyad Care

- Utilize skin-to-skin care (SSC) to reduce heat loss and promote thermoregulation
- Promote mother-infant attachment behaviours
- Increase breastfeeding success
- Decrease crying
- Fewer expressions of pain during procedures such as heel prick blood sampling
- Enhanced family-centered care
- Increased patient satisfaction
- Provision of evidence-based care
- Improved utilization of resources

Recommendation #1

Initiate continuous, uninterrupted skin-to-skin care (SSC) immediately post birth and continue for a minimum of 2 hours.

Encourage SSC throughout postpartum stay with mother or support person, while they are awake.
Recommendation #2

Maintain skin-to-skin contact while doing assessments and interventions.

Recommendation #3

Avoid unnecessary interventions, particularly those that may result in complications requiring transfer to the nursery i.e. routine suctioning.
Recommendation #4

Manage transition using assessment skills recommended in the Neonatal Resuscitation Program (NRP) guidelines.

Recommendation #5

Bring the resources, expertise & equipment to the infant instead of the infant to the resources. Clinical therapies or treatments should be carried out at the bedside whenever possible.
Recommendation #6

Incorporate delayed cord clamping for a minimum of 2 minutes after birth into day-to-day practice.

Recommendation #7

Use of respite/observation nursery (separate spaces in postpartum areas) should be discouraged unless there are maternal medical indications or for safety.
Recommendation #8

Create therapeutic environments that support mother-baby dyad care.

Term Newborn: TRANSITIONAL BEHAVIOUR
Newborn Transition
What does it mean?

The transitional period refers to the first six hours after birth when the newborn transitions from the intrauterine to the extrauterine environment.

Goals of Transition

To provide evidence-based care which supports optimum transition for newborns.

This includes:
- establishing effective respirations and circulation
- achieving thermoregulation
- early feeding
- keeping mom and baby together!
First Stage: 0 to 30 minutes
First Period of Reactivity
- alert, startles, tremors and crying
- grunting, flaring and retractions with periods of apnea < 10 seconds
- irregular respirations
- rate: 60 - 80 / min
- heart rate 160-180 bpm (10 -15min), ↓ to baseline of 100 - 120 bpm
- decreased body temperature
- increased tone and motor activity

Second Stage: 30 min to 2 hrs
Period of Decreased Reactivity
- sleepy, with decreased motor activity
- respirations fast, shallow, and synchronous
- rate: 60 breaths / min
- heart rate 100 -120 bpm
- temperature stabilizing
- normal tone with spontaneous jerks and twitches
Third Stage: 2 to 6 hours
Second Period of Reactivity

- becomes responsive to stimuli
- brief periods of rapid respirations
- tachycardia
- temperature stabilizing
- abrupt changes in tone and colour

CARDIORESPIRATORY TRANSITION
In the beginning…

_Fetal Pulmonary Physiology_

- at term, the fetal lung is filled with approximately 30 ml/kg of an ultra-filtrate of fetal serum fluid.
- during and after birth, this fluid must be removed and replaced with air.

_Fetal-Pulmonary Physiology_

**Before Birth:**

- fluid filled alveoli (not air)
- constricted blood vessels
- blood shunted through ductus arteriosus and away from the lungs
Fetal-Pulmonary Physiology

Immediately After Birth

- fluid in the alveoli is absorbed into lung tissue and replaced by air
- pulmonary blood vessels relax
- increased systemic BP
- decreased pulmonary resistance leading to increased pulmonary blood flow
- decreased blood flow through the ductus arteriosus

Fetal-Pulmonary Physiology

Immediately After Birth (continued)

- air initiates relaxation of pulmonary blood vessels
- ↑ oxygen in blood
- ductus arteriosus constricts
- blood flows through lungs, picking up oxygen
Clear mucous by wiping the baby’s mouth and nose!

**Indications for suctioning:**

- obvious obstruction to spontaneous breathing
- infant requiring positive-pressure ventilation

**If suctioning is indicated...**

- gently suction nares to decrease risk of edema leading to respiratory distress
- mouth first, followed by nose
Consequences of Suctioning

Suctioning is unpleasant for the baby, it can cause a vagal response through stimulation of the larynx, resulting in an:

- increase in blood pressure
- decrease in heart rate
- vomiting and retching
- apnea

Hypoglycemia Screening

- perform glucometer testing at the mother’s bedside without disrupting skin-to-skin care
- at-risk infants who are asymptomatic should have first glucose check at 2 hours of age
THERMO-REGULATION

Thermoregulation

Why are babies at risk for heat loss?
- larger surface area to body mass ratio
- thin permeable skin, especially prems
- small amount subcutaneous fat
- less brown fat stores
- inability to shiver
Cold Stress
Cold stress is important to prevent. It leads to:

- Vasoconstriction
- Increased glucose utilization
- Increased metabolism of brown fat
- Increased oxygen consumption
- Increased metabolic rate

⚠️ It is easier to prevent cold stress than to treat it.

Mechanisms of heat loss

Radiation
Convection
Evaporation
Conduction
Types of Heat Loss

Convection

Air currents increase heat loss created by movement of people, air conditioning or drafts from opening or closing doors.

Prevention:
- room temperature ~ 25°C
- keep doors closed
- cover baby with warmed blanket and hat
- skin-to-skin contact or kangaroo care
- position warmer away from doors and windows

Conduction

When the newborn comes into contact with an object cooler than them, i.e. cold scale, unheated warmer bed.

Prevention:
- skin-to-skin contact; cover baby with warm blanket & hat
- pre-warmed radiant warmer bed (in case skin-to-skin isn’t possible)
- delay weight; use barrier between baby and scale
Types of Heat Loss

**Radiation**

Transfer of heat to cooler objects, not in direct contact with the infant, i.e. cold window

**Prevention:**
- skin-to-skin contact; cover baby with warm blanket & hat
- kangaroo care
- radiant heat source (in case skin-to-skin isn’t possible)

Types of Heat Loss

**Evaporation**

When wet surfaces are exposed to air, cooling occurs as it dries, i.e. wet baby.

**Prevention**
- dry baby & remove wet linen
- skin-to-skin contact; cover baby with warm blanket & hat
- plastic wrap
Skin-to-Skin Care

Kangaroo Care (KC) Method

- created in 1978 by a Columbian pediatrician, Edgar Rey
- response to inadequate and limited incubators
- does not increase risk of mortality for premature infants
- KC allowed premature infants to thrive and survive in developing countries & is now used routinely in NICU settings around the world.
Influence of KC

3 Components of KC:
- skin-to-skin contact
- exclusive breastfeeding
- non-separation of mother and baby

Benefits:
- reduced mortality & morbidity
- reduced length of hospital stay
- improved breastfeeding outcomes

Prolonged skin-to-skin contact in the “kangaroo” position promotes bonding

Ruíz-Pelez J G et al. BMJ. 2004;328:1179-1181
© 2004 by British Medical Journal Publishing Group
The World Health Organization (WHO), Canadian Paediatric Society (CPS) and American Academy of Pediatrics (AAP) say...

Healthy term infants should be placed in skin-to-skin contact with their mothers immediately after birth.

VIDEO
Initiation of Breastfeeding though Breast Crawl

Available online at: http://breastcrawl.com/
Skin-to-Skin
Who can do it?

Skin-to-skin care can be done by the mother, father, partner, family or friend!

Skin-to-Skin
Where can it be done?

Skin-to-skin care can be done in any setting where it is safe to do so

- LDR/LDRP
- Birthing room
- Cesarean operating room
- Recovery room
- Postpartum room
- NICU
Skin-to-Skin Technique: **Birthing Suite**

1. Place infant chest down on mom’s bare chest or abdomen as you dry and stimulate with the blanket
2. Remove the wet blanket and apply a new, warm, blanket to cover the baby
3. Apply dry cap on baby’s head
4. Perform routine procedures: APGAR, ID bands
5. Delay interventions, such as Vitamin K & Erythromycin, until after the first feeding
6. Continue skin-to-skin uninterrupted for 2 hours

Skin-to-Skin Technique: **Postpartum Unit**

1. Easier if mom or partner is wearing a front opening garment, i.e. nursing top or hospital gown
2. Place the unclothed infant prone or lateral against chest
3. Cover with blankets
4. Maintain skin-to-skin contact as much as possible while the mother or partner is awake.
Benefits of Skin-to-Skin Care
- easier and faster physiological adaptation to extrauterine life
- regulates blood glucose levels
- decreased pain during invasive procedures
- reduces crying
- improves mother-baby interaction
- increases breastfeeding success

Skin-to-Skin Physiological Benefits
Accelerate stabilization of:
- temperature
- blood glucose
- cardio-respiratory system
  - breathing becomes regular and less laboured
  - apnea is reduced
  - increased oxygen saturation
  - promotes drainage of secretions
Skin-to-Skin
**Family Interaction & Bonding**

- parents experience sense of awe as they observe the firsts... opening the eyes... first face baby sees
- mothers respond to feeding cues quickly, increasing confidence with baby
- decreased infant crying

Skin-to-Skin
**Increased Feeding Success**

- early feeding: within 30-60 minutes
- analgesic effect of breastfeeding
- increased breastfeeding success
  - baby more alert right after birth
  - massage like movement of hands and rooting motions
  - mouthing movements
  - milk production
  - likelihood of latching in early stages of breastfeeding
- feed formula fed babies 5-10 mL
Variations in Transition

- knowledge of normal changes during transition allows for recognition of variations and early recognition of the compromised newborn.

- variations include:
  - grunting
  - peripheral cyanosis
  - transient dusky episodes during crying
Grunting

A normal part of transition...

- 17% of newborns demonstrate grunting at some point in their first 4 hours of life.
- 69% of infants stop grunting within 30 minutes
- 85% stop within 1 hour
- 93% stop within 2 hours.

Management of Grunting

- put baby skin-to-skin with mother
- carefully observe for evidence of other respiratory symptoms
- delay non-essential interventions for 1-2 hours to give grunting a chance to resolve.
If grunting persists...

What do you do?

Can you monitor or give oxygen to a baby while skin-to-skin?

Absolutely!

How do you do it?
- equipment
- knowledge & skill
- additional support
If you need help to assess baby, who do you call?

- other RNs
- RRT/SCN nurses
- physician: pediatrician, family doctor

**Consultant role:**

Bring expertise to the baby rather than separating baby from mom by a trip to the nursery.

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**Consultant Role**

- dedicated to the baby if indicated
- nursery nurse: consultant role
- continuous observation for variations in transition until the baby’s condition stabilizes or deteriorates, requiring transfer to the nursery
- nursery admission criteria
Red Flags!

- Newborns who deteriorate over time instead of improve, may require increasing levels of support to maintain stability.
- Progressive worsening of symptoms raises a red flag with caregivers.
- Severity of symptoms will determine whether medical treatment is initiated sooner than later.

The Compromised Newborn

**Abnormal Transition:**

- Persistent central cyanosis with oxygen saturation < 85% in room air.
- The need for supplemental oxygen after 2 hours of birth in order to sustain normal oxygen saturation.
- Deterioration of baby’s condition including: increased work of breathing, pallor, hypothermia, hyperthermia, hypoglycemia.

**Consider transfer to nursery or consult transport team**
Questions to ask yourself when assessing a baby’s respiratory status during transition:

- Is the baby skin-to-skin?
- Is the baby grunting for more than 1-2 hours?
- Is the baby’s breathing becoming more laboured?
- What is the baby’s oxygen saturation?
- Is the baby requiring oxygen?

Take home message

Practice changes that support keeping the mother and newborn together immediately after birth and during the postpartum period will have both short and long term benefits for the infant, the family and the system.
“BREAST CRAWL” VIDEO AND GUIDE

Running time: 7 minutes
Available in multiple languages.

Download video: http://breastcrawl.org/video.shtml
Download dossier: http://breastcrawl.org/pdf/breastcrawl.pdf

This video provides an evidence based review and video of a baby taking its first feeding. In addition to educating the viewer about initiating the first feeding, it also highlights the simple intervention of skin-to-skin contact between the newborn and its mother. Skin-to-skin care enables stimulation of the newborn's senses as it takes in its mother using smell, vision, taste and sound. In addition to benefiting the newborn, skin-to-skin care also supports maternal instincts for the first feeding, laying the foundation for maternal attachment behaviours and increased confidence to nurture and care for her baby*.

# Mother-Baby Dyad Care Audit Tool

## Mother-Baby Dyad Audit - Birthing Unit

**Birth:** Date: ___________ Time: _______  
**Birth Type:** □ Vaginal or C/S: □ Elective □ Urgent

### Gestational Age:
- □ 37-39 weeks  
- □ 40-41 weeks  
- □ ≥ 42 weeks

**Baby transferred to:**  
- □ mother-baby unit  
- □ special care nursery  
  Date: ___________ Time: _______

### Auditor:
__________________________  
**Audit Date:** ___________ AT _______ HOURS

1. Umbilical cord clamped within: □ <10 seconds □ 10-60 seconds □ 1-2 minutes □ > 2 minutes

2. Was baby suctioned? □ No □ Yes  
   Was meconium present? □ No □ Yes

3. Reason for suctioning: □ Non-vigorous meconium □ Other: ________________

4. If suctioned, who did the suctioning? □ Physician □ Midwife □ RN □ Respiratory Therapist

5. Duration of skin to skin contact immediately after birth in birthing room or operating room:  
   - □ 1-5 minutes
   - □ 6-15 minutes
   - □ 16-30 minutes
   - □ No skin to skin immediately after birth. Reason: __________________________________

6. Duration of skin to skin during recovery period: □ 1-15 min. □ 16-30 min. □ 31-60 min. □ > 60 min.

7. Vitamin K & Erythromycin eye drops given:  
   - □ 0-15 minutes after birth
   - □ 15-30 minutes after birth
   - □ 30 – 60 minutes after birth

8. First feeding type: □ Breast □ Formula □ No feeding offered  
   Feeding initiated within (minutes from birth): □ 0-30 minutes □ 30 – 60 minutes □ > 60 minutes

9. Continuous observation needed for infant: □ No □ Yes  
   Reason: □ Nasal Flaring □ Tachypnea □ Grunting □ Other: __________________________

10. If indicated, was there a dedicated care provider for baby until baby stabilized or transferred to SCN/NICU.  
    □ No □ Yes  
    Reason for dedicated care provider: __________________________________

    The dedicated care provider was an: □ RN (L&D) □ RN (SCN) □ RRT □ Other: __________________________

    How long did the dedicated care provider stay? □ 0-10 min. □ 11-30 min. □ > 30 min.

**Transfer to SCN/NICU due to** (if applicable): __________________________________

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Adapted from the Transition of the Newborn audit tool created by the West Cluster Maternal Child Network hospitals, which include: Credit Valley Hospital, Halton Healthcare Services, Trillium Health Centre and William Osler Health System.
Endnotes


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