

Helping Babies Survive
Essential Care for Small Babies
Provider Guide



Helping Babies Survive

JULY 2015

Introduction

To those who provide care for small babies

Essential Care for Small Babies focuses on care of the well small baby:

- *Maintaining normal temperature*
- *Supporting breastfeeding and alternative feeding methods to give breast milk*
- *Preventing infection*
- *Recognizing and responding to problems and **Danger Signs***

The well small baby can remain well and thrive with proper care and basic support. Health care providers and family members play important roles in achieving this goal.

Essential Care for Small Babies also equips health care providers with skills and tools to make changes and improve care in their facilities. In this way providers can achieve better outcomes for babies and their mothers.

Uses of the Provider Guide

To prepare for the *Essential Care for Small Babies* course

Read the section “Review Key Knowledge” if you receive the Provider Guide before the course.

To maintain and increase knowledge and skills

Use the sections “Review Key Knowledge” and “Review Key Skills” to refresh your knowledge and continue building skills.

1. Identify a provider in your facility who will become your partner for review and practice. Ideally this provider should have completed the *Essential Care for Small Babies* course.
2. Together with this partner
 - a) Review key knowledge
 - b) Practice key skills

Help one another identify gaps in knowledge and improve skills. Combine several skills by practicing the exercises at the end of each section in the Provider Guide.

3. Record your practice activities on pages 56 and 57.

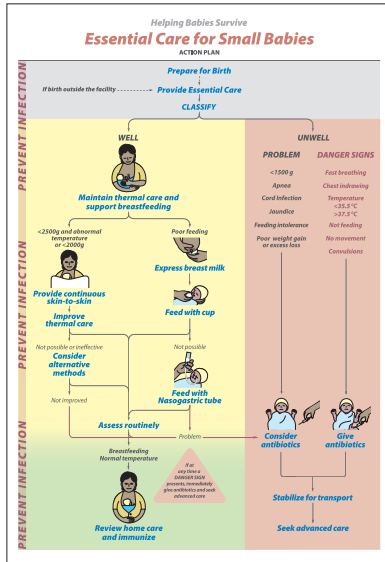
To improve care in your facility

Use the section “What to monitor” and the questions in the section “To improve care” in your facility.

1. Identify differences between the recommended actions and the way these actions are performed in your facility.
2. Discuss how you can change your practice to improve care.
3. Work with others in your facility through an improvement team to make changes that improve the health of mothers and babies.

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If a baby is small Provide Essential Care for Small Babies



To help the baby remain well

Review Key Knowledge

Many small babies will remain well and thrive with proper care and basic support.

The well small baby is one who

- Weighs between 1500 and 2500 grams
- Breathes well
- Maintains a normal temperature with thermal care
- Feeds by breast, cup, or nasogastric tube
- Gains weight
- Does not have a **Danger Sign**

You can help small babies remain well by

- **Preventing common complications**
 - Breathing problems
 - Low temperature
 - Inadequate feeding
 - Infection
- **Recognizing and responding to problems promptly**
 - **Assess** the baby and mother routinely.
 - **Decide** if findings are normal or abnormal.
 - **Act** to continue current care, change care, or refer for advanced care.

Review Key Skills

Work in groups of six to identify the following steps on the Action Plan:

Steps that keep a small baby well and support

- Breathing
- Warmth
- Feeding
- Preventing infection

Steps that recognize and respond to problems or **Danger Signs**

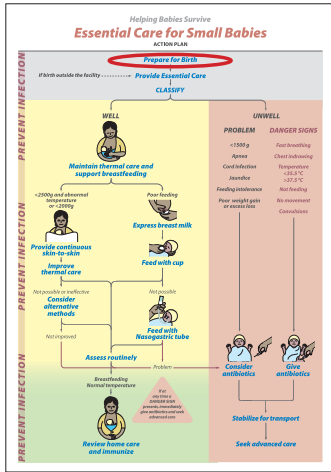
- Classify
- Assess

What to monitor for all babies:

- Birth weight (or weight at admission)
- Discharge weight
- Length of stay (number of days in the facility)

To improve care in your facility:

- How many small babies are cared for in your facility?
- Where, how, and by whom are small babies cared for in your facility?



When a baby is expected to be small Prepare for birth



To prevent problems from the beginning

Review Key Knowledge

Prepare for care of a small baby as soon as the pregnant woman enters the facility.

Review the assessment of the pregnant woman.

- Concerns for preterm labor, bleeding, pre-eclampsia or infection
- Estimated gestation and size
- Medications given (antenatal corticosteroids or antibiotics)

Arrange referral or prepare for the birth.

- Refer if care needed for mother or baby can not be provided.
- Prepare for birth if delivery will occur very soon.

When preparing for birth of a small baby, take special steps to support breathing and temperature as well as prevent infection.

- Have a skilled helper present.
- Decide where advanced care will be provided.
- Provide extra warmth at delivery.
- Wash hands and assemble clean equipment.
- Prepare an area near mother for helping the baby to breathe.
- Select an appropriate size mask and check the ventilation bag.
- Discuss special needs of small babies with the family, including skin-to-skin care.

Review Key Skills

Work in pairs or groups of 3 to play the roles of the mother, the provider caring for the mother, and a skilled helper. Enact the following scenario:

A woman arrives at your facility with ruptured membranes. She says her baby is not due for 2 months. The woman will deliver very soon.

- Review the woman's assessment with her provider and your helper.
- Prepare for birth of a small baby.
- Communicate with the family.

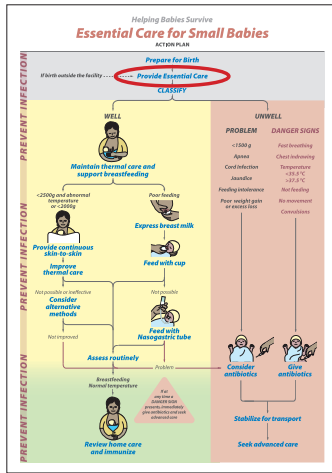
Change roles and repeat practice.

What to monitor:

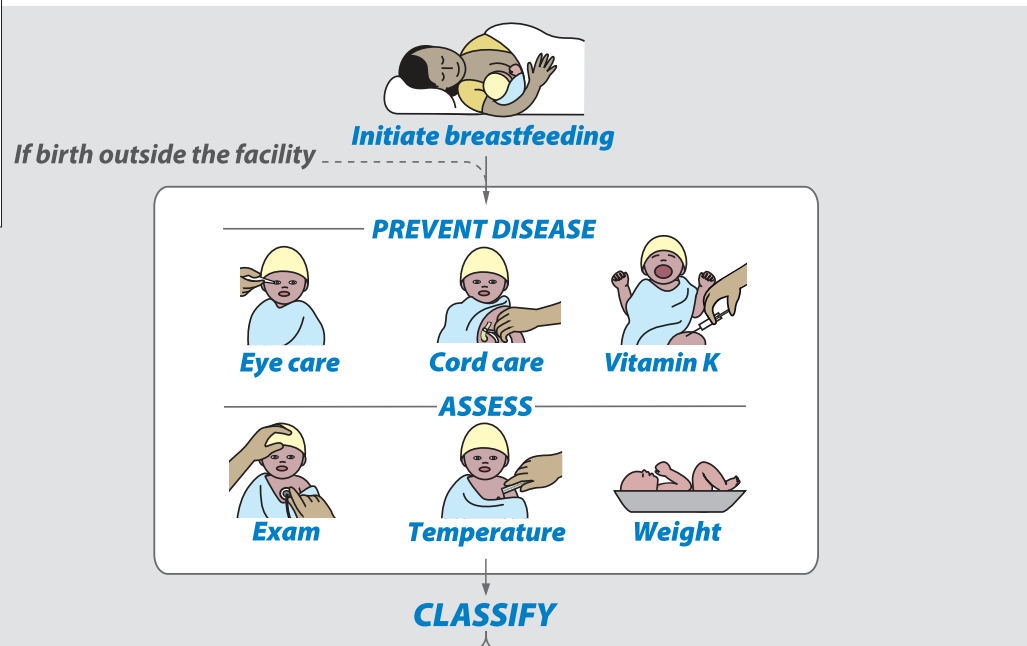
- **How often** do pregnant women require referral?
- **How often** do small babies require help to breathe?
- Is a birth attendant who can help babies breathe present at **every** delivery?

To improve care in your facility:

- Where do you refer mothers in preterm labor and how are they transported?
- Is a small mask available for bag and mask ventilation?
- How can you provide extra warmth in the area for birth?



When a baby is recognized to be small Provide essential newborn care



To keep the baby well

Review Key Knowledge

Provide the steps of essential newborn care with special attention to warmth and breathing to keep the small baby well.

Continue skin-to-skin care

- Keep mother and baby together after birth to *prevent* heat loss.
- Uncover only the areas needed for care.
- Check temperature by feeling the foot or forehead every 15 minutes until temperature is measured with a thermometer.
- If skin feels cool at any time, measure temperature immediately.

Monitor breathing

- Rapid breathing (>60/min) and chest indrawing are seen more frequently with small babies.
- Check breathing every 15 minutes until first complete exam.

Initiate breastfeeding

- Help the mother recognize the signs of readiness to feed and the proper position of the baby at the breast.

Provide care with minimal interruption of skin-to-skin care, including steps to

- **Prevent disease:**
Eye care, cord care, and vitamin K
- **Assess:**
Temperature, exam, and weight while covered with a warm blanket

Infants born outside the facility should be provided all the above steps of essential newborn care.

Review Key Skills

Work in pairs or groups of 3 to play the roles of the mother, the provider caring for the baby.

Demonstrate how to provide the steps of essential newborn care while communicating with the mother and minimizing interruption of skin-to-skin care.

- Provide eye care, cord care and vitamin K.
- Measure temperature and examine.
- Weigh the baby.

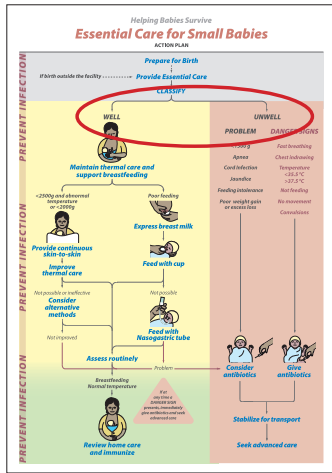
Change roles and repeat practice.

What to monitor:

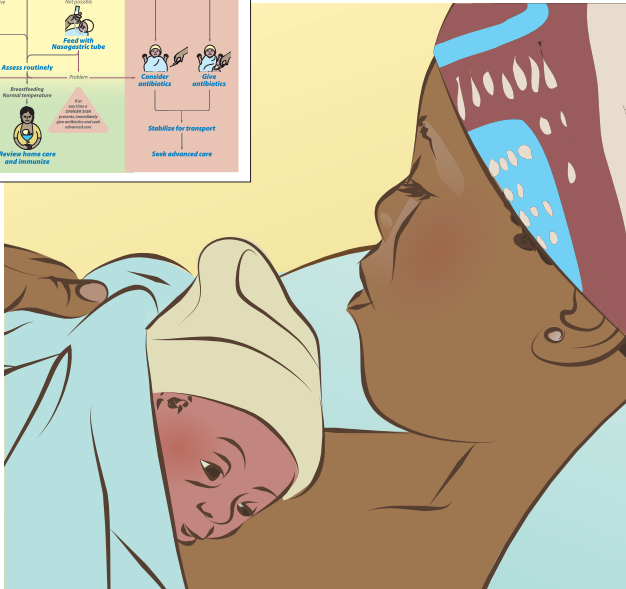
- **Do all** babies have the first temperature measured within 90 min of birth?
- **Do all** small babies have a normal first temperature?
- **Do all** small babies remain skin-to-skin with their mothers?
- **Do all** small babies initiate breastfeeding within one hour of birth?
- **Do all** small babies receive eye care, cord care, and vitamin K?

To improve care in your facility:

- What is done to provide warmth for small babies after birth?
- Who checks breathing and temperature every 15 minutes in the first hours after birth of a small baby?
- Is the ability to breastfeed assessed within one hour?
- What care do small babies receive if they are born outside a health facility?
- What happens to these babies if they develop problems?



By 90 minutes
Classify a small baby



To determine further care

Review Key Knowledge

Classify a small baby by 90 minutes to determine further care. Classification is based on the baby's weight, temperature, and exam.

The WELL small baby

- Weighs between 1500 and 2500 grams *and*
- Maintains a normal temperature with thermal care *and*
- Breathes well

The UNWELL small baby

- Weighs less than 1500 grams *or*
- Develops a problem *or*
- Has a **Danger Sign**
 - Fast breathing or severe chest indrawing
 - Temperature $<35.5^{\circ}\text{C}$ or $>37.5^{\circ}\text{C}$
 - No movement
 - Convulsions

Classification may be delayed up to 4 hours if a small baby has

- Fast breathing or chest indrawing that is improving
- Temperature $<36.5^{\circ}\text{C}$ that rises within one hour of improved thermal care
- Poor feeding due to lack of energy or difficulty with coordination to breastfeed

These babies require careful assessment for other signs of illness.

All small babies require ongoing routine assessment as they are at risk of developing problems.

Review Key Skills

Work in pairs to discuss one of the following babies and share classification with the group.

- A term baby with a birth weight of 2400 grams who has a temperature of 35.4°C , is breathing 80 breaths per minute, and does not initiate breastfeeding
- A preterm baby with a birth weight of 1750 grams who has a temperature of 36.7°C and does not initiate breastfeeding
- A baby with a birth weight of 1800 grams who has a temperature of 36.3°C which rises after one hour of improved skin-to-skin care

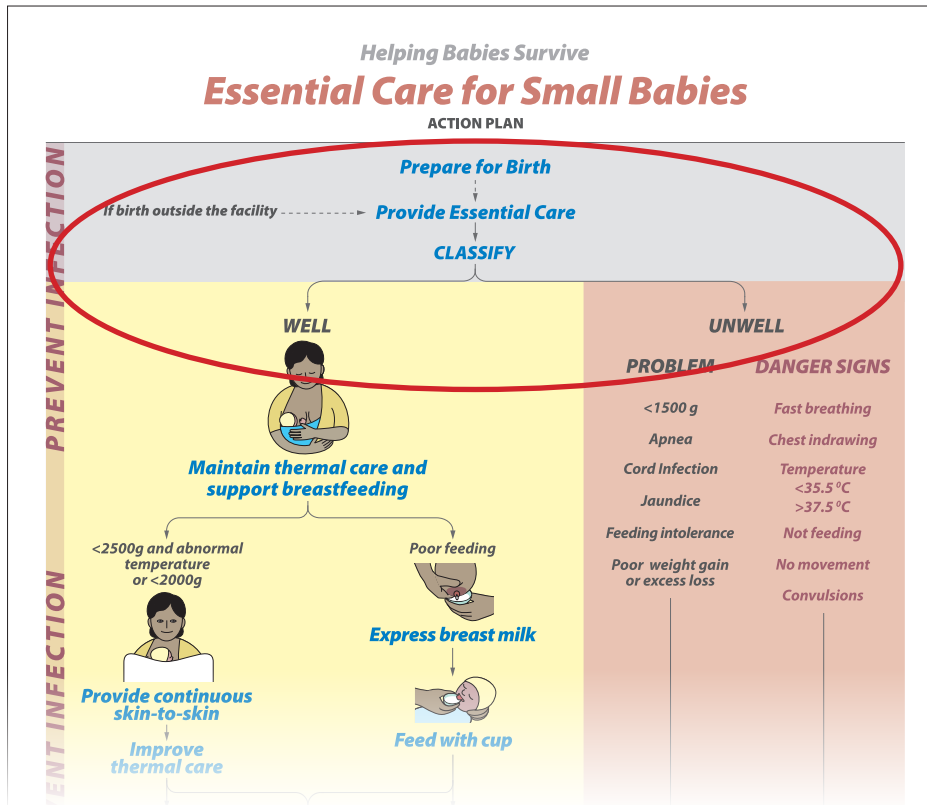
What to monitor:

- **What percentage** of small babies are classified by 90 minutes?
- **What percentage** of small babies are classified as well?
- **How often** do babies who are classified as well develop problems or **Danger Signs**?

To improve care in your facility:

- Who classifies babies to plan their care in your facility?
- How would you care for a small baby who cannot be classified at 90 minutes?
- How would you care for a baby who develops problems or a **Danger Sign** at your facility?

Exercise: Essential care at birth and classification



SCENARIO 1

A mother has given birth to a small baby. The baby cried at birth and was placed skin-to-skin on the mother's chest.

Show what you would do for this small baby in the first 90 minutes after birth. Work in pairs to play the role of the mother and the provider.

- Communicate with the mother
Explain to the mother the steps that you will provide to keep the small baby healthy.
- Continue skin-to-skin care
Show the mother how to keep the baby skin-to-skin for warmth.
- Monitor breathing
Describe fast breathing and severe chest indrawing for the mother.
- Initiate breastfeeding
Encourage mother to attempt breastfeeding baby.

Prevent disease

- Eye care
- Cord care
- Vitamin K

Assess

- Exam
- Temperature
- Weight

} In any order

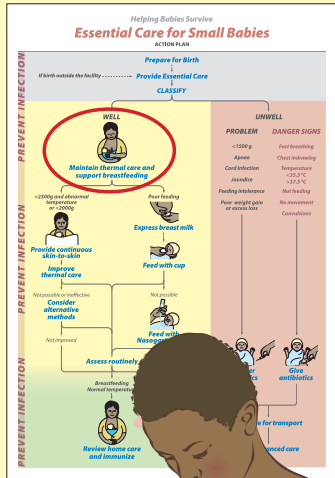
SCENARIO 2

The baby weighs 1600 grams and has a temperature of 36.7°C during doing skin-to-skin care. The baby is pink and is breathing comfortably. State what assessments you will use to classify the baby and whether the baby is well or unwell.

- Weight (between 1500 and 2500g)
- Breathing well
- Normal temperature with skin-to-skin care
- No **Danger Sign** present
- Classify as well small baby

Materials for Practice

- Alcohol-based hand cleaner or soap
- Small baby simulator, manikin or doll
- Head covering, diaper and socks
- Extra blankets
- Thermometer
- Syringe to simulate eye care and vitamin K
- Scale (if available)



If a baby is small and well

Maintain thermal care



To prevent the baby from becoming cold

Review Key Knowledge

All small babies need attention to basic thermal care to prevent them from becoming cold.

Assist mothers to provide skin-to-skin care for small babies in the first 24 hours after birth.

- Dry the baby thoroughly at birth, cover the head, and place the baby skin-to-skin.
- Keep mother and baby together for care and examination.
- Put on a diaper and dry head covering.
- Place the baby upright on the chest between the breasts.
- Position the baby with arms and legs flexed, head turned.
- Secure snugly with a cloth or binder pulled up to the ear to support the head.
- Close mother's garment over the binder.

Check temperature by feeling the forehead or the foot at feedings (every 3-4 hours). Measure temperature with a thermometer.

- Whenever the baby feels cold or hot
- At least twice in the first 24 hours
 - Within 90 minutes after birth
 - When in a stable thermal environment
- Once a day while in the facility

Wrap the baby and follow routines to prevent heat loss when no longer using skin-to-skin care.

- Cover the head and put on socks.
- Dress the baby in an extra layer of clothes.
- Wrap the baby snugly.
- Change wet diapers promptly and remove wet clothes or blankets.
- Do not bathe a small baby; clean by wiping with a wet cloth as needed after 24 hours.

Review Key Skills

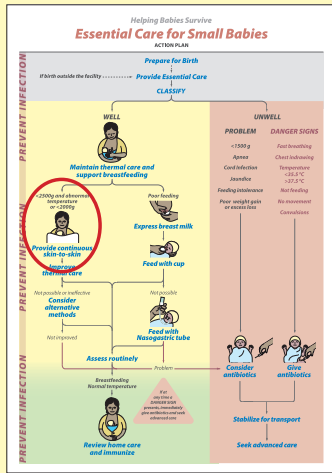
Combine practice with continuous skin-to-skin care on page 19.

What to monitor:

- **Do all** small babies have a temperature measured and recorded at least once a day?
- **How often** do small babies have low temperatures?
- **How often** do babies < 2500 grams receive skin-to-skin care for the first 24 hours?

To improve care in your facility:

- When and why do small babies become cold in your facility?
- What can be done to improve the thermal environment for small babies where you work?
- Does your facility encourage prolonged skin-to-skin care of all small babies in the first 24 hours?



If a baby is cold or a well baby is less than 2000 grams

Provide continuous skin-to-skin care



To help maintain normal temperature

Review Key Knowledge

Continuous skin-to-skin care is the preferred method to maintain normal temperature of babies less than 2000 grams and any baby who is cold despite wrapping.

Continuous (>20 hours per day) skin-to-skin care can be provided

- To well small babies including those fed by cup or nasogastric tube
- By the mother or a family member
- During most activities including sleep

When mother must temporarily interrupt skin-to-skin care

- Encourage a family member to place the baby skin-to-skin or
- Wrap the baby snugly

Support and counsel the mother to

- Develop confidence in positioning and caring for her baby skin-to-skin
- Assess her baby
- Engage in self-care
- Receive help from family members

Assess a baby during continuous skin-to-skin care and teach the mother to observe and report concerns about

- **A**ctivity – normal vs low or convulsions
- **B**reathing - comfortable vs fast, chest indrawing or pauses > 20 seconds (apnea)
- **C**olor – pink vs blue, pale, or yellow
- **T**emperature – normal vs hot or cold

Review Key Skills

Work in pairs to play the roles of the mother and the provider.

Assist mother in positioning her baby skin-to-skin.

Teach mother to observe

- **A**ctivity
- **B**reathing
- **C**olor
- **T**emperature

Show mother how to record feedings and wet or dirty diapers on a simple form. Ask mother if she has questions about the baby's care.

Change roles and repeat practice.

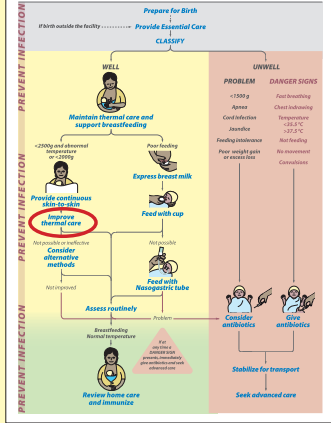
What to monitor:

- **Do all** babies < 2000 grams receive continuous skin-to-skin care?
- **How often** does continuous skin-to-skin care alone maintain normal temperature for babies < 2000 grams?

To improve care in your facility:

- Is there a place for mothers to provide continuous skin-to-skin for many days or weeks?
- Who teaches mothers how to monitor their babies during continuous skin-to-skin care?

Helping Babies Survive
Essential Care for Small Babies
 ACTION PLAN



If baby's temperature is low Improve thermal care



To help maintain normal temperature

Review Key Knowledge

If a baby's temperature is low with skin-to-skin contact, improve the thermal environment for skin-to-skin care.

Improve continuous skin-to-skin care by

- Removing wet clothes and changing diaper
- Adding hat, socks and mittens for the baby
- Covering mother and baby with extra blankets
- Minimizing interruptions in skin-to-skin contact
- Improving the thermal environment of the room
 - Raising the temperature
 - Reducing movement of air
 - Removing or covering cold surfaces

Recheck temperature in 1 hour

If skin-to-skin care is not possible or the baby cannot maintain normal temperature, consider an alternative method of warming.

- Radiant warmers, incubators, heated cots or heat-producing wraps should only be used when skin-to-skin care is ineffective or not possible.
- Misuse and malfunction of warming devices can result in dangerously low or high temperature.
- Warming devices increase risk of infection when used to care for more than one baby or not properly cleaned and stored.

Only trained providers should use alternative warming devices.

Overheating a baby can cause dehydration, apnea, brain injury, and death.

Review Key Skills

Work in pairs to play the roles of the mother and the provider.

A baby has a low temperature despite skin-to-skin care.

- Identify the possible causes of low temperature with skin-to-skin care.
- Describe the steps to improve thermal care.

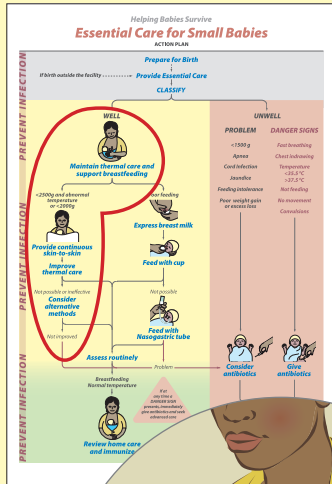
If your facility uses incubators or radiant warmers, refer to the Provider Guide (pages 56-68) for proper use and skills practice.

What to monitor:

- **How often** is incubator care provided for babies < 2500 grams?
- **How often** is a functioning incubator not available for each baby who needs one?
- **Do all** babies who require care in an incubator have a temperature measured and recorded at least every 3 hours?
- **How often** do babies have low or high temperatures in an incubator?

To improve care in your facility:

- If skin-to-skin care cannot be provided, how do you keep a small baby warm in your facility?
- How is the equipment cleaned and maintained and checked for safety?
- Are manuals available?
- How often and where is a baby's temperature recorded during care in an incubator?



Exercise: Thermal care



Maintain thermal care



Provide continuous skin-to-skin care



Improve thermal care

SCENARIO 1

A 1600 gram baby is receiving continuous skin-to-skin care. Mother states that baby is active and feeding well but his body feels cool to touch.

Show what steps you will take for this baby.

- Measure temperature with thermometer.
(Baby has temperature of 36.0°C.)
- Change wet diaper and remove wet clothes.
- Confirm or add head covering, socks, and mittens for baby.
- Cover mother and baby with an extra blanket.
- Minimize interruptions of skin-to-skin contact.
- Reduce exposure to cold air or cold surfaces.
- Communicate with mother steps being used to improve thermal care.*
- Recheck temperature within an hour.
(Baby has temperature of 36.5°C.)

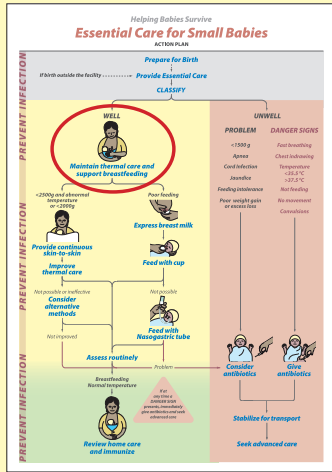
SCENARIO 2

If the baby's temperature rose only to 36.3°C, describe what you would do next.

- Consider an alternative method of warming.
- Discuss and plan with a provider skilled in using a radiant warmer or incubator.

Materials for Practice

- Blanket
- Mittens
- Head covering, diaper and socks
- Thermometer
- Diaper



If a baby is small

Support breastfeeding



To provide the best nutrition

Review Key Knowledge

Breast milk is the best food for small babies. Small babies may not have the skills or strength to feed at the breast initially. Mothers attempting to breastfeed a small baby require extra support and encouragement.

Support the special needs of a small baby who is attempting breastfeeding with

- Nipple stimulation prior to feeding
- Added attention to positioning and supporting head
- Early licking and practice at breast.
- Manual expression of drops of breast milk onto the nipple
- Awakening baby when changing to opposite breast

Evaluate the baby's effectiveness at breastfeeding

- Wakes and shows feeding readiness cues.
- Latches, sucks steadily with pauses, and swallows audibly.

- Feeds without choking, turning blue or pale.
- Mother reports breast softening.

A baby who is adequately fed

- Breastfeeds for at least 10 minutes per side.
- Sleeps comfortably between feedings every 2-3 hours.
- Has 6-8 wet diapers a day.
- Loses no more than 10% of birth weight.

If a baby cannot breastfeed effectively, support mother's breast milk production and use an alternative feeding method as needed.

- Teach mother to express breast milk every 3 hours (page 27).
- Encourage time at breast during skin-to-skin care and reassess readiness to breastfeed daily.
- Ensure mother has adequate nutrition, increased fluid intake and care for medical problems.

Review Key Skills

Work in pairs to play the roles of the mother and the provider. Enact the following scenario:

A 2000 gram baby is 3 days old and breastfeeding. Weight today is 1700 grams.

- Evaluate the baby's effectiveness at breastfeeding.
- Determine if the baby is breastfeeding adequately.

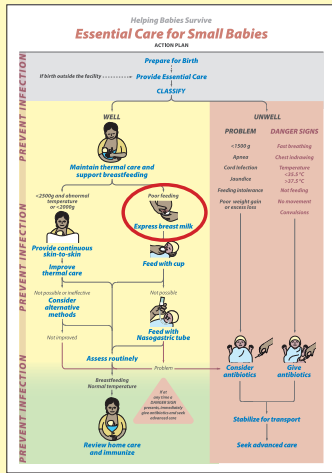
Change roles and repeat practice.

What to monitor:

- **How often** do mothers receive counseling on breastfeeding?
- **Do all** mothers of small babies breastfeed or provide some breast milk?

To improve care in your facility:

- Who helps mothers and babies with breastfeeding in your facility?
- What methods help small babies breastfeed effectively?



If a baby cannot feed directly from the breast
Express breast milk



To provide milk for alternative feeding method

Review Key Knowledge

A mother should express breast milk for a baby who cannot feed directly from the breast.

Teach a mother to express breast milk

- Wash hands with soap and water.
- Sit comfortably.
- Hold a clean container under nipple.
- Place thumb above and first finger below and behind the dark portion of the breast.
- Support the breast with other fingers.
- Press the breast gently towards the chest wall.
- Compress the breast between the thumb and finger. Avoid sliding the thumb and finger on the skin of the breast.
- Rotate the position of the thumb/finger around the breast with each compression.
- Express breast until milk drips, then express the other breast.

- Alternate between breasts 5-6 times (20–30 minutes).
- Consider nipple stimulation, massage of breasts and use of warm compresses prior to or during expression to improve milk flow.

Express milk at the times when a baby would normally feed (at least 8 times during a 24 hour period).

Expressed milk should be

- Stored in a clean, covered container
- Kept in the coolest place possible for up to 6 hours
- Discarded after 6 hours unless refrigerated (can be used up to 24 hours if refrigerated)

Closely assess the volume of expressed milk, as it may not be adequate for a small baby in the first few days.

Review Key Skills

Work in pairs or groups of 3 to play the roles of the mother and the birth attendant.

- Follow the sequence of steps to express breast milk.
- Give guidance to the mother while assisting her.
- Correctly store the breast milk.

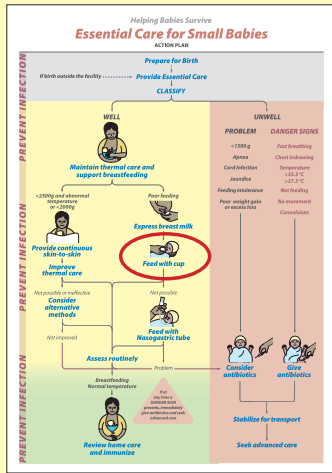
Change roles and repeat practice.

What to monitor:

- **Do all** small babies receive only breast milk? If not, what else do they receive?
- **Is** breast milk **always** discarded after 6 hours at room temperature or 24 hours refrigerated?

To improve care in your facility:

- How can you help mothers of small babies who have problems expressing breast milk?
- How do you clean containers to store milk?
- Where do mothers store expressed milk in your facility?
- What do you feed a small baby when mother's milk volume is not adequate?



If a baby cannot feed directly from the breast

Feed by cup



To provide breast milk until breastfeeding can occur

Review Key Knowledge

Cup feeding should be used for babies who are able to swallow but not able to feed adequately from the breast.

When using an alternative method to feed breast milk

- Feed according to baby's cues every 2-4 hours.
- Give at least 8 feedings per day. The baby should be awake and alert.
- Measure the amount to be fed into a container (see Provide appropriate volume, provider guide page 66).
- Place a small amount of milk in the cup.
- Position the baby semi-upright.
- Rest the cup lightly on the baby's lower lip touching the outer, upper lip.
- Tip the cup so milk reaches the baby's lips.

- Allow the baby to lick the milk. To avoid choking, do not pour milk into the mouth.
- Allow the baby to take small amounts frequently.
- Continue feeding for up to 30 minutes. The baby is finished when the mouth closes, and the baby no longer appears interested.
- Burp the baby after feeding.

A baby who is able to cup feed will

- Take the full desired amount.
- Not cough, choke or turn blue with feeding.
- Be awake and able to feed every 2-4 hours.

Cup feedings may be combined with breastfeeding or nasogastric tube feeding.

- Assess the baby's readiness to breastfeed daily.
- The baby who cannot cup feed adequately will need nasogastric tube feeding.

Review Key Skills

Work in pairs to play the roles of the mother and the provider.

- Demonstrate the steps of feeding while explaining them to the mother.
- Assess the baby's ability to take cup or spoon feedings.

Change roles and repeat practice.

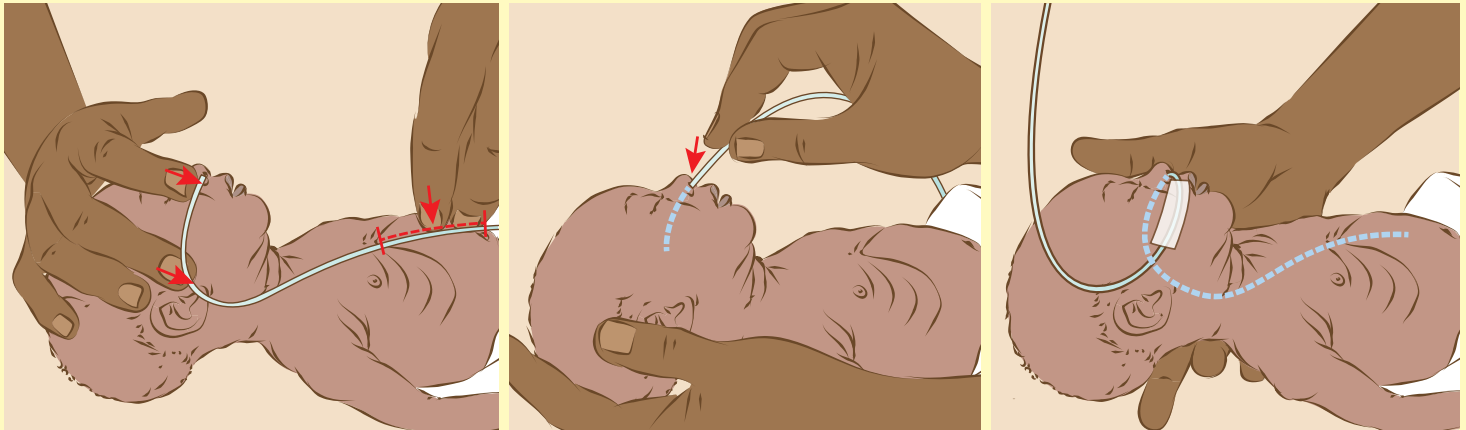
What to monitor:

- **How many** do (what percentage of) small babies receive cup or spoon feedings in your facility?
- **Do all** small babies receive at least 8 feedings per day?
- **How often** do babies have problems with cup or spoon feeding?

To improve care in your facility:

- Who decides that a baby needs cup feeding?
- What device is used to help small babies feed by mouth?
- Who feeds the baby when breastfeeding is not possible?
- Who teaches mothers how to feed their small babies with a cup?

If a baby cannot feed enough by mouth
Insert a nasogastric tube



To provide breast milk until breastfeeding can occur

Review Key Knowledge

Nasogastric tube feeding should be used for a baby who cannot feed well by mouth and

- Is unable to swallow without choking *or*
- Has early inadequate intake by breast or cup with low urine output (<6 wet diapers a day) *or*
- Cannot take enough breast milk by breast or cup to grow properly

To insert a nasogastric tube

- Wash hands.
- Select correct size tube (5 or 6 French).
- Measure length of tube to be inserted from tip of nose to earlobe to half way between tip of breast bone and umbilicus.
- Put a mark on tube at measured length.
- Lubricate the tube with expressed milk.

- Insert the tube gently through nostril to the mark.
- Confirm proper placement of the tube:
 - Inject 2 mL of air while listening for the sound of air entering the stomach *and*
 - Withdraw air from the stomach and look for small amounts of gastric fluid
- Tape tube to the skin close to the nose.
- Note depth of insertion using mark on tube and record in chart.

To remove a nasogastric tube

- Pinch the tube closed and withdraw rapidly.
- Have a suction device available to remove milk or secretions in the throat.

Review Key Skills

Work in pairs to play the roles of the provider and a helper.

- Select, measure, lubricate and insert the nasogastric tube.
- Confirm proper placement of the tube and secure it.
- Remove the tube safely.

Change roles and repeat practice.

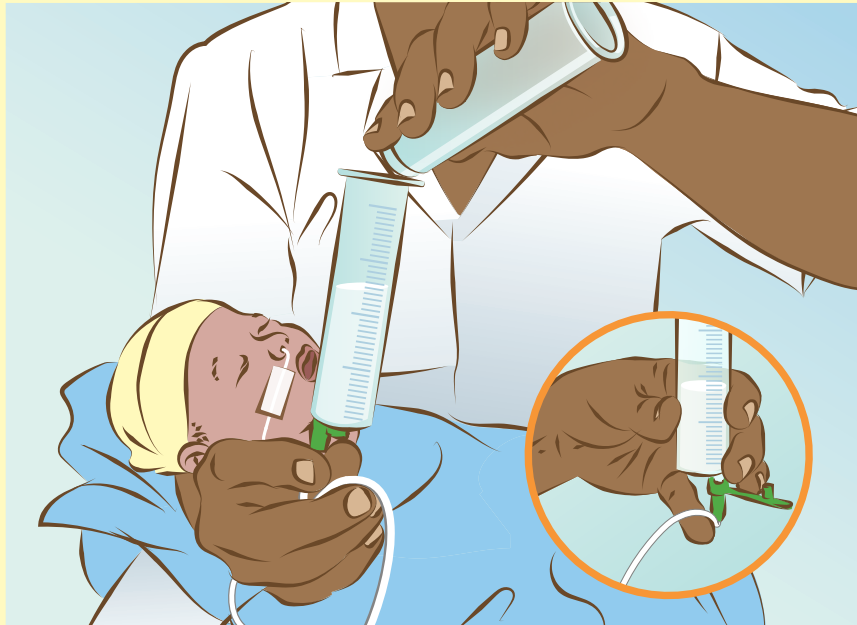
What to monitor:

- **How many** (what percentage of) small babies receive nasogastric tube feedings?
- **How often** do complications occur with nasogastric tube placement?

To improve care in your facility:

- Who decides a baby needs nasogastric tube feeding?
- Does your facility have nasogastric tubes appropriate for feeding small babies?
- What is the routine to confirm proper placement of a nasogastric tube in your facility?
- What can be done to address problems with nasogastric tube placement?

When using alternative feedings
**Provide appropriate volume
of breast milk**



To support growth

Review Key Knowledge

Feeding volume is determined by the age and weight of a baby. Begin nasogastric feedings at low volumes, increase gradually, and adjust volumes for amounts taken by mouth. Evaluate tolerance with every feeding to identify problems promptly.

Determine the volume of a feeding:

2.0 - 2.5 kg start at 15 mL per feeding every 3 hours, increase 5 mL per feeding daily to 40+ mL

1.75 - 2.0 kg start at 10 mL per feeding every 3 hours, increase 5 mL per feeding daily to 35+ mL

1.5 - 1.75 kg start at 8 mL per feeding every 3 hours, increase 4 mL per feeding daily to 32+ mL

Once on full volume feedings, add 2 mL per feeding for every 100 grams gained above birth weight.

Small babies may require 160-180 mL/kg daily to gain weight adequately.

Evaluate feeding adequacy.

Babies receiving an adequate volume of milk

- May lose up to 10% of weight in first 10 days
- Gain 15 grams/kg daily after early weight loss
- Show steady weight gain on a growth chart

Feeding intolerance that requires advanced care includes

- Repeated vomiting (especially if bile-stained)
- Distended abdomen or tenderness
- Bloody stools

Review Key Skills

Work in pairs to

- Determine the amount of milk for one feeding:
 - 1.6 kg birthweight baby on day 2
 - Same baby on day 4 (current weight 1.48 kg)
 - Same baby on day 10 (current weight 1.7 kg)
- Determine if daily weight change is acceptable for a baby born at 2 kg:
 - On day 1,2,3,4: 2000, 1980, 1970, 1960 g
 - On day 8,9,10,11: 2000, 2070, 2070, 2090 g
 - On day 14,15,16,17: 2180, 2200, 2220, 2230 g

Discuss as a group (See feeding chart page 66).

Suggested Feeding Volumes in mL per feeding

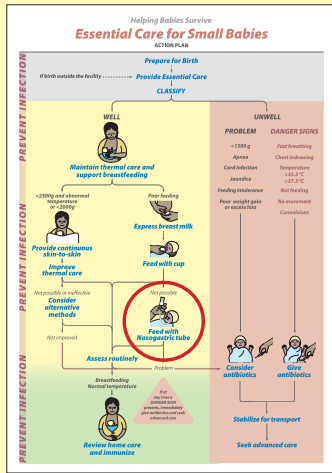
| Birth Weight (kg) | Frequency of feeding | Day of Birth Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 |
|-------------------|----------------------|--------------------|-------|-------|-------|-------|-------|-------|
| 2.0 - 2.5 kg | every 3 h | 15 | 20 | 25 | 30 | 35 | 40 | 40+ |
| 1.75 - 2.0 kg | every 3 h | 10 | 15 | 20 | 25 | 30 | 35 | 35+ |
| 1.5 - 1.75 kg | every 3 h | 8 | 12 | 16 | 20 | 24 | 28 | 32+ |

What to monitor:

- **How often** do small babies lose more than 10% of birth weight?
- **Do all** small babies gain weight adequately beyond the period of initial weight loss?
- **How often** does serious feeding intolerance occur?

To improve care in your facility:

- Who decides the volume of milk to be fed by nasogastric tube?
- How is adequate growth determined? Are growth charts available and used?
- Who monitors a baby's feeding tolerance? If a mother has concerns, who evaluates the baby?



If a baby cannot feed enough by mouth

Give breast milk by nasogastric tube



To provide safe and adequate feeding

Review Key Knowledge

Feeding with a nasogastric tube requires close attention to the baby. In some facilities, mothers may learn to administer feedings.

- Measure the amount to be fed into a container (page 68).
- Confirm tube is secured and the mark on the tube is visible at the edge of the nose.
- Hold the baby semi-upright, preferably skin-to-skin or in the lap.
- Open the nasogastric tube and attach an empty syringe of the correct size (without plunger).
- Pinch off the tube and pour milk into syringe.
- Hold syringe 20cm above the baby and release pinch to allow milk to flow into the stomach.

- If flow does not start
 - Gently insert syringe plunger but do not push *or*
 - Cover top of the syringe barrel with thumb and release
- Remove syringe and recap tube when finished.

If baby spits up or chokes, slow the feed by

- lowering syringe and/or
- gently pinching tube

Each feed should take about 10-15 minutes.

When combining nasogastric tube feedings with cup or breastfeeding, adjust for the volume taken by cup or approximate intake at breast.

Review Key Skills

Work in pairs to play the roles of the mother and the provider.

- Explain to the mother the steps as you administer a feed.
- Discuss feeding tolerance with mother.
- Demonstrate adjusting the flow of milk.

Change roles and repeat practice.

What to monitor:

- **How often** do complications occur during nasogastric tube feedings?

To improve care in your facility:

- What problems occur while feeding a baby by nasogastric tube?
- Who feeds small babies by nasogastric tube in your facility?
- Who responds if problems occur during nasogastric feedings?

When using alternative methods
Assess breastfeeding readiness



To support transition to breastfeeding

Review Key Knowledge

Small babies using alternative feeding methods should gradually transition to breastfeeding.

Assess the signs of readiness for breastfeeding each day.

- Awakening or stirring before feedings
- Rooting, opening mouth, licking at feeding time
- Crying or demanding at feeding time

Choking or blue color with breastfeeding suggests a baby is not yet ready.

When transitioning to breastfeeding

- Limit time at breast if the baby tires.
- Provide supplemental feeding by nasogastric tube based on estimated intake at breast

- Withhold supplement if the baby sucks actively during a breastfeeding of adequate duration.
- Gradually increase breastfeeding without supplementation.
- Remove nasogastric tube when taking the majority of feedings by mouth.
- Confirm that weight gain continues with breastfeeding alone.

Review Key Skills

Work in pairs to discuss feeding of the following babies.

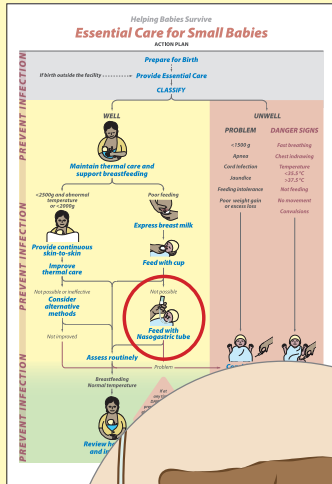
- 7-day-old baby who awakens, licks and breastfeeds for a total of 2-3 minutes
- 10-day-old baby who awakens, licks and breastfeeds for a total of 10 minutes
- 8-day-old baby who licks but chokes and turns blue with attempt to breastfeed

What to monitor:

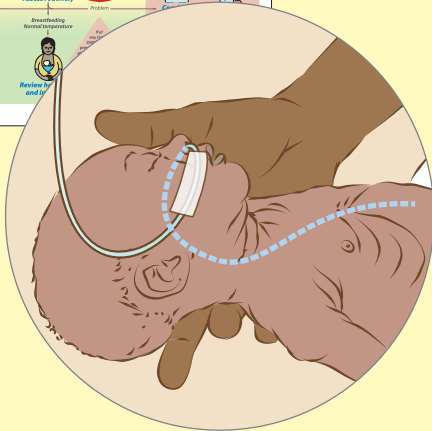
- **Do all** babies receive nasogastric feeding while held at breast?
- **Are all** babies assessed for breastfeeding readiness at least once a day?

To improve care in your facility:

- Who decides on the volume of milk to be fed by nasogastric tube when cup or breastfeeding occurs first?
- Who assesses that a baby is ready to have the nasogastric tube removed?



Exercise: Feeding breast milk



Insert a nasogastric tube



Provide appropriate volume of breast milk



Give breast milk by nasogastric tube

SCENARIO 1

A baby born at 1600 grams is 12 hours old. You have assessed the feeding skills and the baby cannot feed by breast or cup. You have helped the mother to express and collect breast milk.

PART I

Place a nasogastric tube:

- Communicate with the mother and explain need for nasogastric feedings
- Wash hands
- Select correct size tube
- Measure length of tube to be inserted and mark tube
- Lubricate tube with expressed breast milk
- Insert tube
- Confirm proper placement
- Tape tube on face

PART II

The nasogastric tube has been correctly inserted.

Now explain to the mother the steps in giving a feeding and have her practice the following:

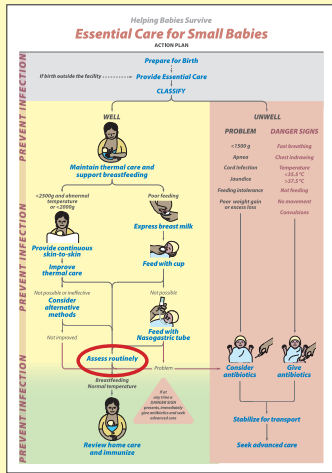
- Measure amount to be fed into a container
- Confirm tube secured with mark at the nose
- Check position of tube before each feed
- Position the baby correctly
- Open the nasogastric tube and attach an empty syringe
- Pinch the tube and pour milk into syringe

Administer a feeding:

- Hold the syringe 20 cm above the baby
- Release pinch to allow milk to flow
- Monitor the baby for choking or spitting up and adjust flow if needed
- Cap the tube

Materials for Practice:

- Alcohol-based hand cleaner or soap
- Small baby manikin, doll, or simulator
- Clean nasogastric tube (5-6 French)
- Tape (to mark and secure tube)
- 20 mL syringe
- Stethoscope
- Water to simulate milk
- Container to collect liquid



When providing care to a small baby

Assess routinely



To help determine if a baby is well or needs advanced care

Review Key Knowledge

Routine assessment of small babies determines further care and detects conditions that require change in care or referral.

The condition of small babies can change quickly. Prompt recognition and response to problems can be life-saving.

Assess a baby at least once per shift.

- Discuss mother's observations (activity, breathing, color, temperature)
- Perform a limited physical exam
- Review
 - Temperature
 - Weight
 - Intake (frequency, volume, tolerance)
 - Output (wet diapers, stools)

Decide if the baby is well or unwell

Well:
Desired progress



Act

Continue care
Adjust volume of feedings as needed

Uncertain:
Change from previous
Not clearly normal



Change support
Assess more frequently

Unwell:
Problem or
Danger Sign



Seek advanced care

Review Key Skills

Work in groups of 3 to play the role of the mother, a provider and a colleague who is assuming care of the baby.

A 6-day-old baby whose mother has no concerns, shows normal activity and color, temperature of 36.7 and weight of 1530, a loss of 150 grams from birthweight of 1680 grams. The baby is taking 24 mL of breast milk every 3 hours and had 6 wet diapers and 3 stools in the previous day.

1. Assess the baby, decide on the significance of the findings, and decide whether to continue or change care.
2. Communicate your assessment to your colleague.

Change roles and repeat practice.

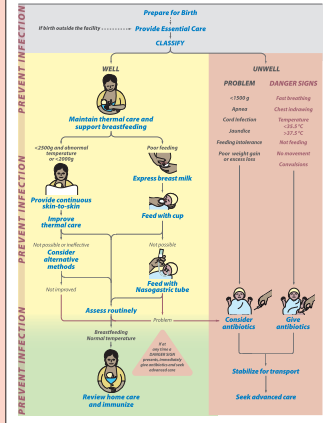
What to monitor:

- **Do all** small babies have a complete assessment recorded every shift?
- **Do providers always** communicate their assessments to their colleagues?

To improve care in your facility:

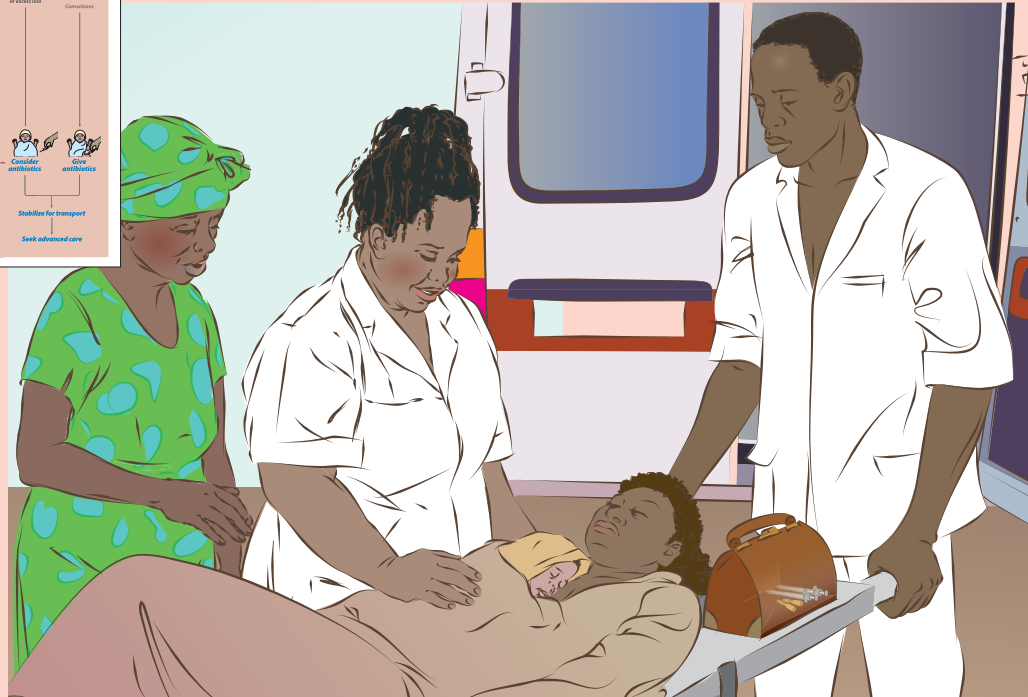
- Who is responsible for regular assessment of small babies in your facility?
- If a mother has concerns about her baby, who responds to her?

Helping Babies Survive
Essential Care for Small Babies
 ACTION PLAN



When a baby needs advanced care

Stabilize for transport



To improve outcome

Review Key Knowledge

Prompt referral, stabilization before transport and care by a trained team improve outcomes.

Seek advanced care promptly for

- **Danger Signs**
- Problems
 - Weight < 1500 grams
 - Apnea
 - Cord infection
 - Jaundice
 - Feeding intolerance
 - Poor weight gain

Stabilize by

- Supporting breathing as needed (oxygen if available)
- Continuing skin-to-skin care (or safe alternative)
- Providing fluids and nutrition (nasogastric feeds or intravenous fluids if unable to feed)

- Giving antibiotics if indicated
- Placing nasogastric tube for distended abdomen

Communicate with the family

- Explain the baby's condition.
- Encourage parents to see and touch the baby.

Communicate with the receiving facility

- Explain the baby's condition.
- Discuss stabilization.
- Agree on transport plan (appropriate vehicle, equipment, persons).
- Discuss options for lodging/care for mother.
- Prepare a referral note.

Review Key Skills

Work in pairs to discuss the following babies.

Use local guidelines to decide which of the following babies would be appropriate for transport. Share with the larger group your plan for stabilization and what to include in a referral note.

1. A 2-hour-old 1600 gram baby who has developed grunting and chest wall indrawing.
2. A 2-week-old old birth weight 1700 gram baby who remains 200 grams below birth weight despite nasogastric feedings.
3. A 2-week-old 2000 gram baby who has bile-stained vomiting and a distended abdomen.

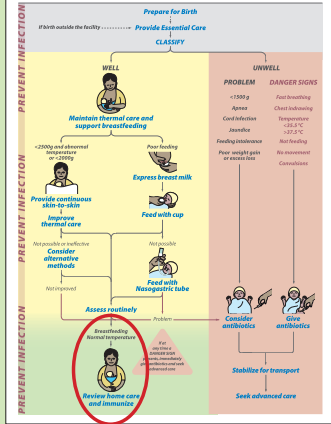
What to monitor:

- **How often** do small babies require referral for advanced care?
- Do you **always** communicate with the receiving facility before a referral?
- Does a referral note **always** accompany a baby?

To improve care in your facility:

- How does your facility stabilize a baby for transport ?
- Where do you refer small unwell babies? How are they transported?
- Who accompanies sick babies in transport from your community?
- Do providers have discussions as a group when a baby dies or is transported from your facility?

Helping Babies Survive
Essential Care for Small Babies
 ACTION PLAN



When a small baby is ready for discharge

Review home care



To keep the baby well

Review Key Knowledge

Planning for successful discharge occurs throughout care in the facility. Small babies who are sent home too soon are at risk of becoming sick and failing to grow.

Continue skin-to-skin care until the baby

- Weighs 2000 grams
- Can maintain normal temperature when wrapped *or*
- Does not tolerate skin-to-skin care (wiggles, pulls out limbs, cries, sweats)

A baby is ready for discharge when

- Breathing is normal (no indrawing, rate < 60 breaths per minute, no apnea).
- Temperature is stable (36.5-37.5°C) in a normal environment.
- Weight gain is adequate over 3 consecutive days.
- Mother and baby have demonstrated successful breastfeeding or alternative method of feeding.

- Mother and family are confident they can care for the baby.
- Postnatal care is arranged for mother and baby
 - twice a week until 2000 grams and
 - once a week until 2500 grams

When caring for the baby at home

- Prevent infection with handwashing and clean surroundings.
- Keep the baby warm.
- Breastfeed every 2-4 hours.
- Assess the baby for changes or **Danger Signs** and seek care if necessary.
- Return to the clinic for weighing and immunizations.

A family that is providing skin-to-skin care or alternative feedings at home will need special support from community health workers.

Review Key Skills

Work in pairs to play the roles of the mother and a provider.

- Counsel the mother for home care using the Parent Guide or local materials.

Change roles and repeat practice.

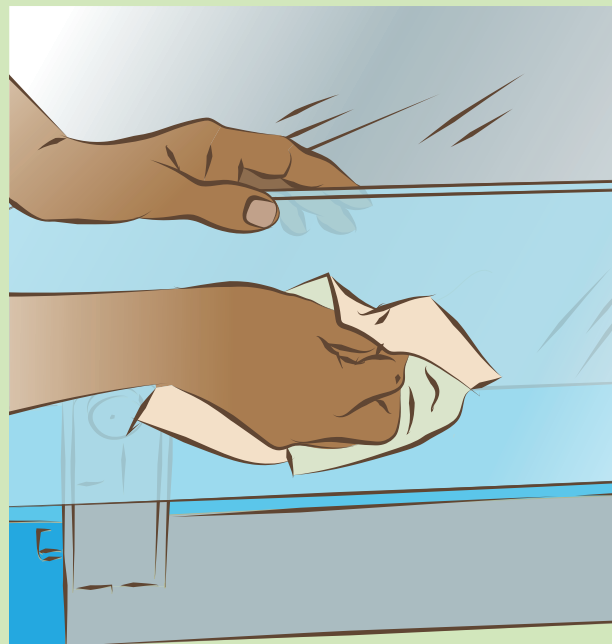
What to monitor:

- **Do all** small babies have a follow-up appointment made before discharge?
- **How often** do small babies need to be readmitted to your health facility within a month of discharge?

To improve care in your facility:

- Who decides when a baby is ready for discharge?
- Do families receive a discharge note to communicate with the provider of follow-up care?
- Are small babies ever sent home too soon? Why?

When caring for a small baby
Prevent infection



To prevent avoidable deaths

Review Key Knowledge

Proper hygiene and preventing infection begin when the pregnant woman enters the facility and continue after a baby is discharged home.

WASH HANDS at the 5 Moments for Hand Hygiene

| When | Example |
|-----------------------------------------|--------------------------------|
| Before patient contact | Touching mother or baby |
| Before a clean task | Preparing milk or feeding |
| After patient contact | Examining a baby |
| After body fluid exposure risk | Changing a diaper |
| After contact with patient surroundings | Cleaning equipment between use |

Create clean surroundings for the small baby by

- Supporting continuous skin-to-skin care
- Placing only one baby in an incubator or warmer
- Cleaning equipment and surfaces of the room
- Providing clean coverings for the baby
- Avoiding contact with sick persons
- Disposing of waste properly

Promote exclusive breastfeeding

- To give protective factors in breast milk
- To avoid contaminated liquids and containers

Begin immunization

- Before discharge of the small baby from the health facility

Review Key Skills

Work in pairs to play the roles of the mother and a provider.

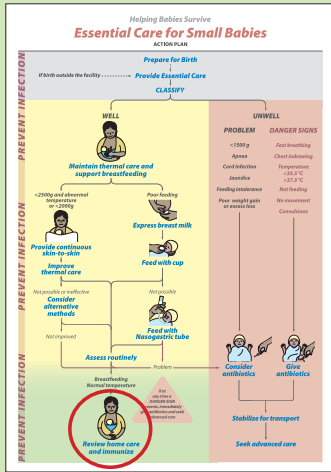
- Teach a mother when and how to wash hands.
- Discuss hygiene and practices that reduce infection in the facility and at home.
- Discuss what immunizations are given in the first 6 months.

What to monitor:

- **Do all** providers always wash their hands before and after patient contact?
- **Do all** babies receive immunizations according to local guidelines before discharge?

To improve care in your facility:

- Are clean water, soap, and clean towels always available for hand washing in your facility? Is alcohol hand cleaner used?
- Are there written policies and procedures for cleaning equipment, cleaning rooms, washing laundry, disposing of waste, avoiding contact with sick staff/patients/visitors?
- Are there procedures for identifying clean equipment?



Exercise: Plan for home care



Review home care with the family

SCENARIO

A small baby born at 1600 grams is now 3 weeks old. He received nasogastric feeds and required continuous skin-to-skin care. He now weighs 1850 grams. He is breastfeeding well. You are doing your daily assessment of the mother and baby.

PART I

Assess this small baby and the mother to determine if the baby is ready for discharge.

- Physical exam shows baby is breathing normally (no chest indrawing, respiratory rate < 60/min, no apnea).
- Temperature is stable (36.5-37.5°C) wrapped in two blankets.
- Weight gain is adequate over 3 consecutive days.
- Mother has established successful breastfeeding (frequency, duration, wet diapers, stools).
- Mother has demonstrated confidence in caring for the baby.

PART II

You determine that the baby is ready for discharge. Talk with the mother about the care her small baby will need after discharge and problems that could arise at home.

- Discuss how to prevent infection.
- Discuss how to keep the baby warm.
- Encourage exclusive breastfeeding.
- Review how to assess the baby for changes, recognize and respond to **Danger Signs**.
- Discuss future immunization plans.
- Provide record of baby's discharge weight and physical exam to mother for follow-up.
- Schedule and document appropriate follow-up (postnatal) visits.

Materials for practice:

- Small baby simulator, manikin or doll
- Parent Guide

At the end of the workshop
Take steps to improve care



to help small babies survive

Review key knowledge

Improving care saves lives. Use your understanding of problems to help babies survive. Systematic improvement of care requires a team approach to identify problems, implement solutions, measure the effects of changes, and sustain the process of change.

Use the Action Plan to

- Identify the key parts of care that help a small baby survive.

Review the Provider Guide to

- Reflect on what you have learned, what you will do differently
- Identify opportunities for improvement (see What to monitor on each page of the Provider Guide).

In your own facility, take part in the process to improve care.

- Mobilize institutional support.
- Form an improvement team.
- Decide what to improve.
- Implement change to improve care.
- Measure the effect of change on quality of care.
- Continue the process of improvement.

Review key skills

Work in groups of six to discuss how to improve care.

- Work together as a team.
- Study the available information.
- Decide what to improve and expected results.
- Identify causes of the problem and possible solutions.
- Describe how to make the selected change.
- Describe how to measure the effect of change.

Use the Provider Guide to improve care in your facility

As an individual, you always do your best to provide excellent care. By working together as a team, providers can have even greater ability to change and improve care in their facility. An improvement team that includes providers, clinical leaders, administrators and others can plan and take actions to improve care for all mothers and babies in the facility.

Essential Care for Small Babies gives you tools to help identify important actions in care and decide what your team would change. The sections “What to monitor” and the discussion questions “To improve care” in your facility are two of these tools.

What to monitor

Use this section to collect information important for improving the care of small babies.

When the action or condition described is the goal for every baby, the question asks “**Do all...**?” It is not enough to answer the question “yes” or “no” or simply give the number of babies received appropriate care. In order to understand how care is provided, the number of babies who received the appropriate care must be compared to the total number of babies who should have received that step in care. This comparison can also be expressed as a percentage.

There are also conditions or problems that occur in some small babies but not in others. When such a condition or problem is being measured, the question asks “How often...?” To understand possible gaps or difficulties with care, the number of babies with the condition or problem must be compared to the total number of babies who should have received that step in care.

Some important events, such as deaths and transfers to advanced care, are both counted and expressed as a percentage of all births or all babies cared for at the facility.

The following are some examples of information that can be collected:

| Question | Cases | Comparison group |
|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| How often is the first temperature measured within 90 minutes of birth? | Number of babies in whom a temperature is measured (recorded) within 90 minutes of birth | Number of babies born in the facility in the same time period |
| Do all mothers of small babies breastfeed or provide breast milk? | Number of mothers of small babies (< 2500 grams) who breastfeed or provide at least some breast milk | Number of mothers of small babies (< 2500 grams) in the same time period |
| How many (how often are) babies transported to receive advanced care? | Number of babies transported to receive advanced care | Number of babies born (and newborns admitted from the community) in the same time period |

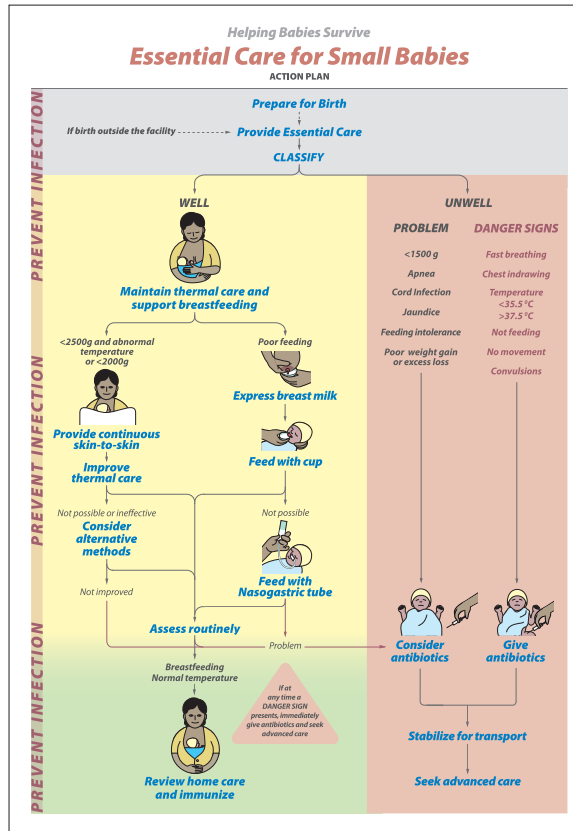
To improve care in your facility

Use the questions in this section to discuss with other providers, supervisors, and members of the improvement team how your routines differ from what is recommended. These questions can also provide ideas for making changes.

Reflect on what changes you want to see in the health of babies and mothers. Talk about improvements that might need changes in the environment where births occur or where small babies receive care. Identify important equipment, supplies, or basic services that are needed in your facility. Consider what steps in care could be performed or documented better.

Work with the facility's improvement team, leaders, and local health authorities to make change. Use the suggestions of "What to monitor" again to show that the change is an improvement. Then continue to monitor and share the progress made. Sharing success helps improvement continue.

Mastering the Action Plan



The columns in the table describe six case scenarios

Trace the pathway through the Action Plan for each case and describe or demonstrate the care you would provide.

The first column describes a well small baby who receives skin-to-skin care for the first day, then maintains a normal temperature and breastfeeds well.

Columns two through four illustrate babies who are well but need extra support. There are many additional scenarios that combine problems with temperature and feeding.

Columns five and six illustrate babies who are unwell with a problem or a **Danger Sign**.

Use this outline and the Action Plan to create other cases using observations from your experience. You can also plan or review the care of a small baby in your facility.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <i>Prepare for birth</i> | <i>Prepare for birth</i> | <i>Prepare for birth</i> | <i>Prepare for birth</i> | <i>Prepare for birth</i> | <i>Prepare for birth</i> |
| <i>Provide essential newborn care</i> CLASSIFY: Well, small | <i>Provide essential newborn care</i> CLASSIFY: Well, small, abnormal temperature or <2000g | <i>Provide essential newborn care</i> CLASSIFY: Well, small, poor feeding | <i>Provide essential newborn care</i> CLASSIFY: Well, <2000 g, poor feeding | <i>Provide essential newborn care</i> CLASSIFY: Unwell, problem | <i>Provide essential newborn care</i> CLASSIFY: Unwell, Danger Signs |
| <i>Maintain thermal care</i> <i>Support breastfeeding</i> | <i>Maintain thermal care</i> <i>Support breastfeeding</i> <i>Provide continuous skin-to-skin care</i> <i>Consider alternative methods of warming</i> | <i>Maintain thermal care</i> <i>Support breastfeeding</i> <i>Provide continuous skin-to-skin care</i> <i>Express breast milk</i> | <i>Maintain thermal care</i> <i>Support breastfeeding</i> <i>Provide continuous skin-to-skin care</i> <i>Consider alternative methods of warming</i> <i>Express breast milk</i> | < 1500 grams Apnea Cord infection Jaundice Feeding intolerance | |
| | | <i>Feed with cup or spoon</i> | <i>Feed with cup or spoon or nasogastric tube</i> | <i>Poor weight gain or excess loss</i> | |
| | | <i>Assess breast feeding readiness</i> | <i>Assess breast feeding readiness</i> | | |
| <i>Assess routinely</i> | <i>Assess routinely</i> | <i>Assess routinely</i> | <i>Assess routinely</i> | <i>Consider antibiotics</i> | <i>Give Antibiotics</i> |
| <i>Review home care and immunize</i> | <i>Review home care and immunize</i> | <i>Review home care and immunize</i> | <i>Review home care and immunize</i> | <i>Stabilize for transport</i> | <i>Stabilize for transport</i> |
| | | | | <i>Seek advanced care</i> | <i>Seek advanced care</i> |
| | | <p>If at any time a DANGER SIGN presents, immediately give antibiotics and seek advanced care</p> | | | |

Refresher training: documentation of completion

Preparation for birth and essential care in the first 90 minutes

| | Date | Initials | Date | Initials | Date | Initials | Date | Initials | Date | Initials |
|------------------------------------------------------|------|----------|------|----------|------|----------|------|----------|------|----------|
| Prepare for birth | | | | | | | | | | |
| Provide essential newborn care | | | | | | | | | | |
| Eye care | | | | | | | | | | |
| Cord care | | | | | | | | | | |
| Vitamin K | | | | | | | | | | |
| Weigh | | | | | | | | | | |
| Temperature | | | | | | | | | | |
| Exam | | | | | | | | | | |
| Classify | | | | | | | | | | |
| Exercise: essential care at birth and classification | | | | | | | | | | |

Maintain thermal care

| | Date | Initials | Date | Initials | Date | Initials | Date | Initials | Date | Initials |
|--------------------------------------|------|----------|------|----------|------|----------|------|----------|------|----------|
| Maintain thermal care | | | | | | | | | | |
| Provide continuous skin-to-skin care | | | | | | | | | | |
| Improve thermal care | | | | | | | | | | |
| Exercise: Thermal care | | | | | | | | | | |

Support breastfeeding

| | Date | Initials | Date | Initials | Date | Initials | Date | Initials | Date | Initials |
|----------------------------------------------|------|----------|------|----------|------|----------|------|----------|------|----------|
| Support breastfeeding | | | | | | | | | | |
| Express breast milk | | | | | | | | | | |
| Feed by cup or spoon | | | | | | | | | | |
| Insert a nasogastric tube | | | | | | | | | | |
| Provide an appropriate volume of breast milk | | | | | | | | | | |
| Give breast milk by nasogastric tube | | | | | | | | | | |
| Assess breastfeeding readiness | | | | | | | | | | |
| Exercise: Feeding | | | | | | | | | | |

Assess and plan for home care

| | Date | Initials | Date | Initials | Date | Initials | Date | Initials | Date | Initials |
|----------------------------|------|----------|------|----------|------|----------|------|----------|------|----------|
| Assess routinely | | | | | | | | | | |
| Stabilize for transport | | | | | | | | | | |
| Review home care | | | | | | | | | | |
| Prevent infection | | | | | | | | | | |
| Exercise: Review home care | | | | | | | | | | |

MOTHER'S OBSERVATIONS FORM

| Date | Feeds | Urine | Stools | Notes (Activity, breathing, color, temperature, problems) |
|------|-------|-------|--------|--------------------------------------------------------------|
| | | | | |
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Notes: For each date, mother should place a tick mark every time the baby feeds, urinates, and stools.
Report concerns and problems, including **Danger Signs** and feeding intolerance, immediately to a health care worker.

Newborn Assessment Form

Name _____
 Health facility number _____
 Date of birth: _____
 Birth weight: _____ Gestation _____

| Day Time | Day Time | Day Time | Day Time | Day Time | Day Time | Day Time |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | | | | |
| | | | | | | |
| | | | | | | |

1. Mother's Observations

- a) Activity
- b) Breathing
- c) Color
- d) Temperature

2. Examination findings

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
|--|--|--|--|--|--|

3. Intake / Feedings

- a) Number
- b) Method
- c) Volume
- d) Tolerance

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

4. Output

- a) Wet diapers (number)
- b) Stool (number)

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
| | | | | | |

5. Weight

Weight
 Weight change in past 24h

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
| | | | | | |

6. Temperature (°C)

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
| | | | | | |

7. Assessment

| | | | | | |
|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Well <input type="checkbox"/> Uncertain <input type="checkbox"/> Unwell | <input type="checkbox"/> Well <input type="checkbox"/> Uncertain <input type="checkbox"/> Unwell | <input type="checkbox"/> Well <input type="checkbox"/> Uncertain <input type="checkbox"/> Unwell | <input type="checkbox"/> Well <input type="checkbox"/> Uncertain <input type="checkbox"/> Unwell | <input type="checkbox"/> Well <input type="checkbox"/> Uncertain <input type="checkbox"/> Unwell | <input type="checkbox"/> Well <input type="checkbox"/> Uncertain <input type="checkbox"/> Unwell |
|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|

8. Plan

Feeding: volume (increase?)
 method

Other:

Provider initials:

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Newborn Referral Form

Patient Information

Patient's name _____
 Health system ID number _____
 Parents' names _____
 Address _____ District/Village _____

Referral Information

Referring facility _____ Date _____
 Provider _____ Phone number _____
 Receiving facility _____
 Provider _____ Phone number _____

Clinical Information

Date of birth _____ Time _____ Sex _____ Birth weight _____ Gestational age _____
 Date of transfer _____ Weight at transfer _____

Complications during pregnancy and labor:

Type of delivery: vaginal-spontaneous vaginal-instrumented C-section

Clinical diagnoses and problems:

Reason for transfer:

Danger signs:

Fast breathing Chest indrawing Abnormal temperature of _____ No movement Convulsions

Problem:

< 1500 grams Apnea Cord Infection Jaundice Feeding intolerance Poor weight gain or excess loss

Other: _____

Treatments given:

Antibiotics: _____

Other: _____

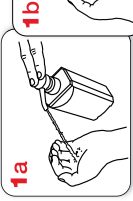
Advice during transfer:

Note written by _____ Phone _____

Date _____ Time _____

Hand washing and hand cleaning

How to handrub? WITH ALCOHOL-BASED FORMULATION



1a

Apply a pintail of the product in a cupped hand and cover all surfaces.

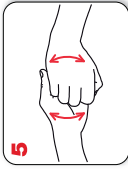


1b



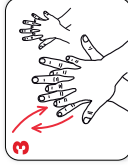
2

Rub hands palm to palm



5

backs of fingers to opposing palms with fingers interlocked



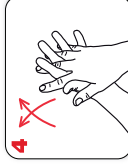
3

right palm over left dorsum with interlaced fingers and vice versa



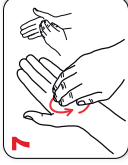
6

rotational rubbing of left thumb clasped in right palm and vice versa



4

palm to palm with fingers interlaced



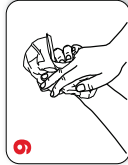
7

rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa



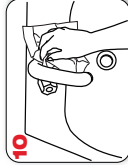
8

rinse hands with water



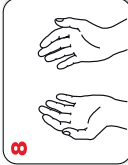
9

dry thoroughly with a single use towel



10

use towel to turn off faucet



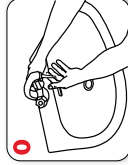
8

...once dry, your hands are safe.



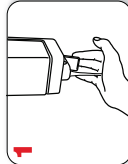
20-30 sec

How to handwash? WITH SOAP AND WATER



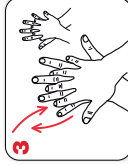
0

Wet hands with water



1

apply enough soap to cover all hand surfaces.



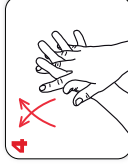
3

right palm over left dorsum with interlaced fingers and vice versa



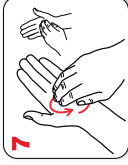
6

rotational rubbing of left thumb clasped in right palm and vice versa



4

palm to palm with fingers interlaced



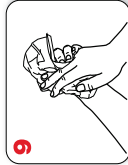
7

rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa



8

rinse hands with water



9

dry thoroughly with a single use towel



10

use towel to turn off faucet



11

...and your hands are safe.



40-60 sec

Design: mondrights network



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World Health Organization
October 2006, version 1.

Integrated Assessment of the Small Baby

| Evaluation | Assessment | Action Continue | Change | |
|-------------------------------|------------------------------------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Observations of mother | Stable findings – good activity, no apnea, pink color, warm | Continue to monitor | | |
| | Concerns – change in activity or color, possible apnea, hot or cold to touch | | Increase monitoring Reinforce care practices | |
| | Problems or Danger Signs | | | Consider antibiotics and advanced care |
| Temperature | Normal temperature | Maintain thermal care | | |
| | Low or high temperature | | Improve thermal care | |
| | Low or high (Danger Sign) | | | Improve thermal care and begin antibiotics |
| Feeding (intake) | Taking feedings by method appropriate for ability | Continue to evaluate ability to breastfeed directly | | |
| | Taking feedings by a method above or below ability | | Provide increased support for feedings (cup or nasogastric tube) OR allow to feed more independently | |
| | Intolerance of feedings | | | Place nasogastric tube for drainage and provide fluids by IV if necessary; evaluate need for antibiotics |
| Output | Normal voiding and stools | Continue to monitor | | |
| | Decreased/increased voiding or stools | | Adjust feedings | |
| | Bloody stool, no stool, bilious or bloody vomiting, poor urine output | | | Place nasogastric tube for drainage and provide fluids by IV if necessary; evaluate need for antibiotics |
| Physical assessment | Normal (baseline) | Continue regular assessment | | |
| | Change from baseline | | Assess possible significance of change and monitor closely | |
| | Danger Signs, distended abdomen, jaundice, cord infection | | | Antibiotics if indicated |
| Weight | Growth adequate | | | |
| | Growth slow or fast | | Increase or decrease feeding volume | |
| | Growth inadequate despite changes | | | Refer for fortified breast milk or IV nutrition |

Alternative Warming Methods: Incubator and Radiant Warmer

| | Incubator | Radiant Warmer |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Indications for use | To maintain normal temperature of a small baby when skin-to-skin care is not possible or is ineffective. | |
| Timeframe for use | Short or medium term. | Short-term. |
| Preparation | Clean equipment with disinfectant, allow disinfectant to dissipate before use, and protect from contamination. | |
| Initiation | A clean, functioning device should be immediately available for use by a provider trained in its use. | |
| Policies | <ul style="list-style-type: none"> - Written policies and procedures should guide the use of all alternative warming devices in a facility. - An operations manual should be readily available for each warming device. - Maintenance of devices should be performed on a pre-determined schedule. | |
| Cleaning | <ul style="list-style-type: none"> - Clean the incubator or radiant warmer between babies and once a week for the same baby. - Disassemble the device so that all surfaces and parts can be wiped with disinfectant and thoroughly dried. - Use cleaning/disinfectant solutions such as 2% glutaraldehyde or 0.5% accelerated hydrogen peroxide. - Allow chemicals to evaporate thoroughly from the reassembled incubator or warmer before storage or use. - Protect the disinfected incubator or warmer from contamination and store in a clean place. | |

Use of Incubator

| Background | Air Mode | Servo (Skin control) Mode |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <ul style="list-style-type: none"> - An internal or auxiliary temperature probe reads the air temperature. - A set air temperature is selected on the control panel. - Set air temperature is adjusted by the operator based on the frequently observed air and baby temperatures. | <ul style="list-style-type: none"> - A temperature probe is placed on the baby's exposed skin and secured with a reflective probe cover. - The set or desired skin temperature is selected, usually 36 to 36.5°C. Skin temperature is slightly lower than axillary temperature. - Adjustments are made on the basis of frequently measured set point, air and baby (axillary) temperatures. |
| Initiation | <ul style="list-style-type: none"> - Use air mode to pre-warm the incubator before moving the patient. - Set air temperature to 34+ 0.5°C for an infant 1500 -2000 grams or 33 + 1°C for an infant 2000-2500 grams. - Dress baby lightly. - Put only one baby in a incubator or warmer. - If using servo (skin control) mode, attach skin temperature probe, switch control panel to servo mode and set goal skin temperature of 36 – 36.5°C. | |
| Monitoring | <ul style="list-style-type: none"> - Check baby's axillary temperature hourly until stable; also note air temperature and skin temperature (in servo mode) - Check servo probe placement every 3 hours. Relocate the probe every 12 hours to another dry, non-bony area. The baby should not lie on the skin temperature probe. - Take and record temperature of baby and device every 3 hours. - Look for an increasing or decreasing trend in the environmental temperature; investigate any alarm or infant temperature < 36.5 or > 37.5°C. | |
| Adjustment | <ul style="list-style-type: none"> - Air mode: adjust air temperature by 0.5°C up if the baby is cool (<36.5°C) and down if baby is hot (>37.5°C). - Servo mode: If alarming check probe placement and adjust temperature by 0.5°C up if baby is cool (<36.5°C) and down if baby is hot (>37.5°C). - Keep the incubator door closed to avoid cooling the baby and causing wide swings in temperature. | |
| Discontinuation | <ul style="list-style-type: none"> - When skin-to-skin care is possible or baby is rewarmed and maintaining temperature of 36.5 -37.5°C. - Baby weighs over 1600 grams, is gaining weight adequately for 3-5 days and is maintaining temperature of 36.5 -37.5°C with incubator temperature of 27-28°C. | |

Review Key Skills

Incubator

Work in a group of 6 participants with an incubator used in your facility.

- Review your facility's policy/procedure for the use of an incubator and discuss indications for use.
 - Read the recommended cleaning procedure in the operating manual for the incubator.
 - Identify the place where a clean incubator is stored.
 - Use the operating manual to identify each of the controls.
 - Discuss initial settings of the incubator
 - For a baby weighing 1550 grams
 - For a baby weighing 2100 grams
 - Demonstrate how to attach a skin temperature probe if using servo mode.
 - Show where and when to record baby's temperature, air temperature (and skin temperature with servo mode).
- Describe how to adjust settings
 - For a baby temperature of 36.4°C
 - For a baby temperature of 37.7°C
 - Describe your response to a steady increase in incubator air temperature from 32°C to 34°C over the past 2 hours with a baby temperature of 36.5°C.

Use of Radiant Warmer

| Background | Manual Mode | Servo (Skin control) Mode – preferred mode for safety |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <ul style="list-style-type: none"> - Heater output is selected on the control panel (usually as a percentage of power). - Depending on the setting selected a baby might be insufficiently warmed or dangerously overheated. - Safe operation depends on frequent measurement of the baby's temperature, so use should be only short-term. | <ul style="list-style-type: none"> - A temperature probe is placed on the baby's exposed skin and secured with a reflective probe cover. - The set or desired skin temperature is selected, usually 36 to 36.5°C. Skin temperature is slightly lower than axillary temperature. - Adjustments are made on the basis of frequently measured set point and baby (axillary) temperatures and heater output. |
| Initiation | <ul style="list-style-type: none"> - Pre-warm in manual mode by setting heat output to desired power. Manual: Set heat output control to middle range. - Servo (skin control) mode: Attach skin temperature probe, switch control panel to servo mode and set goal skin temperature of 36 – 36.5°C. - Dress baby lightly. - Put only one baby on a warmer. | |
| Monitoring | <ul style="list-style-type: none"> - Check baby's temperature every 15 minutes until stable. - Take baby's temperature and record it and the output of the warmer every hour. Record the skin temperature also in servo mode. - Check temperature probe placement every hour with monitoring of temperature. - Look for an increasing or decreasing trend in the heater output; investigate any alarms or infant temperature < 36.5 or > 37.5°C. | |
| Adjustment | <ul style="list-style-type: none"> - Manual mode: adjust heater output up if the baby is cool (<36.5°C) ; remove baby from warmer or adjust heater output down if baby is hot (>37.5°C). - Servo mode: If alarming check probe placement and adjust skin temperature by 0.5°C up if baby is cool (<36.5°C) and down if baby is hot (>37.5°C). | |
| Discontinuation | <ul style="list-style-type: none"> - When skin-to-skin care is possible or baby is rewarmed and maintaining temperature of 36.5 -37.5°C. | |

Review Key Skills

Radiant Warmer

Work in a group of 6 participants with a radiant warmer used in your facility.

- Review your facility's policy/procedure for the use of a radiant warmer and discuss indications for use.
 - Read the recommended cleaning procedure in the operating manual for the radiant warmer.
 - Identify the place where a clean radiant warmer is stored.
 - Use the operating manual to identify each of the controls.
 - Discuss initial settings of the radiant warmer
 - For a baby weighing 1550 grams
 - For a baby weighing 2100 grams
 - Demonstrate how to attach a skin temperature probe if using servo mode.
 - Show where and when to record baby's temperature, heater output (and skin temperature with servo mode).
- Describe how to adjust settings
 - For a baby temperature of 36.4°C
 - For a baby temperature of 37.7°C
 - Describe your response to a steady increase in the need for heater output over the past 2 hours with a baby temperature of 36.5°C.

Feeding volumes

| <i>Suggested Feeding Volumes in mL per feeding</i> | | | | | | | | |
|----------------------------------------------------|----------------------|--------------------|-------|-------|-------|-------|-------|-------|
| Birth Weight (kg) | Frequency of feeding | Day of Birth Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 |
| 2.0-2.5 kg | every 3 h | 15 | 20 | 25 | 30 | 35 | 40 | 40+ |
| 1.75-2.0 kg | every 3 h | 10 | 15 | 20 | 25 | 30 | 35 | 35+ |
| 1.5-1.75 kg | every 3 h | 8 | 12 | 16 | 20 | 24 | 28 | 32+ |

After day 7:

- Add 2 mL per feeding for each 100 grams of weight gain above birthweight

| <i>Suggested Feeding Volumes in mL/kg/day</i> | | | | | | | | |
|-----------------------------------------------|----------------------|--------------------|-------|-------|-------|-------|-------|-------|
| Birth Weight (kg) | Frequency of feeding | Day of Birth Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 |
| 2.0-2.5 kg | every 3 h | 60 | 80 | 100 | 120 | 140 | 160 | 160+ |
| 1.75-2.0 kg | every 3 h | 50 | 70 | 90 | 110 | 130 | 150 | 160+ |
| 1.5-1.75 kg | every 3 h | 40 | 60 | 80 | 100 | 120 | 140 | 160+ |

After day 7:

- Some babies may require 160 – 180 mL/kg/day to grow
- Some babies may require higher calorie feedings

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Helping Babies Survive Essential Care for Small Babies Provider Guide

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Notes

Notes

Helping Babies Survive Essential Care for Small Babies

ACTION PLAN

