World Health Organization

Essential Newborn Care Modular Course

Second edition, interim version

Alternative methods of feeding

Facilitator Notes

Draft version for field testing

Symbols

Pre-service

In-service


Self-paced learning


Critical reflection


Videos


Role play


Questions


Case study


Simulation


Clinical practice


Treasure Hunt


The situation


Summary


Quality improvement

Review slides for this module and decide which slides you will use based on the learners' needs. The decision depends on assessments or a pre-test and whether learners are pre-service or in-service.

Hide slides that will not be used. Decide which sections will be carried out as self-paced learning and give clear instructions. The choice should be made in advance as it will influence the time needed for each section. Time for each section will also depend on learners' level (basic or intermediate).

If learners carry out exercises as self-paced learning, remember to quickly show answers and to answer any questions learners may have. To save time, consider using a parking lot or online forum.

Pre-service
Activities placed in a blue box are for pre-service learners only.

In-service
Activities placed in a red box are for in-service learners only.

Self-paced learning
Sections marked with the self-paced learning symbol can be carried out by learners in various ways:

- as preparation in advance for the module
- facilitated during face-to-face sessions
- for reinforcement after facilitated face to face session
- online (WHO Academy) as part of blended learning
- using linked applications (apps).

Session preparation

See equipment and materials checklist.

Key materials for demonstrations and simulations

- Small newborn mannequin, newborn mannequin and model breasts.
- Examples of cups and spoons, locally available containers suitable for expressed milk
- Intragastric tubes sizes 5, 6 and 8; 20 mL syringes; adhesive tape; scissors; pH strips with 0.5 pH gradations.

Session length

The times shown are only indictive. Adjust according to learners needs BEFORE running module. See time tables.

13. Alternative methods of feeding		
	Pre-service	**In-service**
Section	Duration (hr mins)	Duration (hr mins)
Goal and Situation	0:05	0:05
Why an alternative method	0:15	0:30
Helping a mother	0:30	0:45
Alternative methods	0:30	0:45
Transition to breast feeding	0:30	0:30
Treasure hunt	0:00	0:10
Clinical practice	0:45	1:30
Quality improvement	0:10	0:30
	2:45	**4:45**

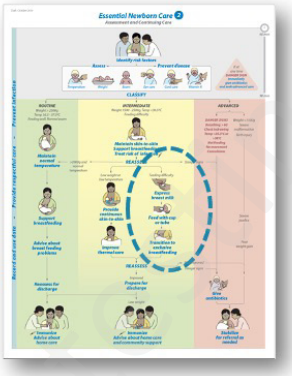
1. Goal

1. Goal
2. The situation
3. Why an alternative…
4. Helping a mother…
5. Alternative methods…
6. Transition to breast feeding
7. Summary
8. Treasure hunt
9. Clinical practice
10. Quality improvement

1. Goal and learning outcomes

Newborns unable to breastfeed are supported using appropriate alternative feeding methods.

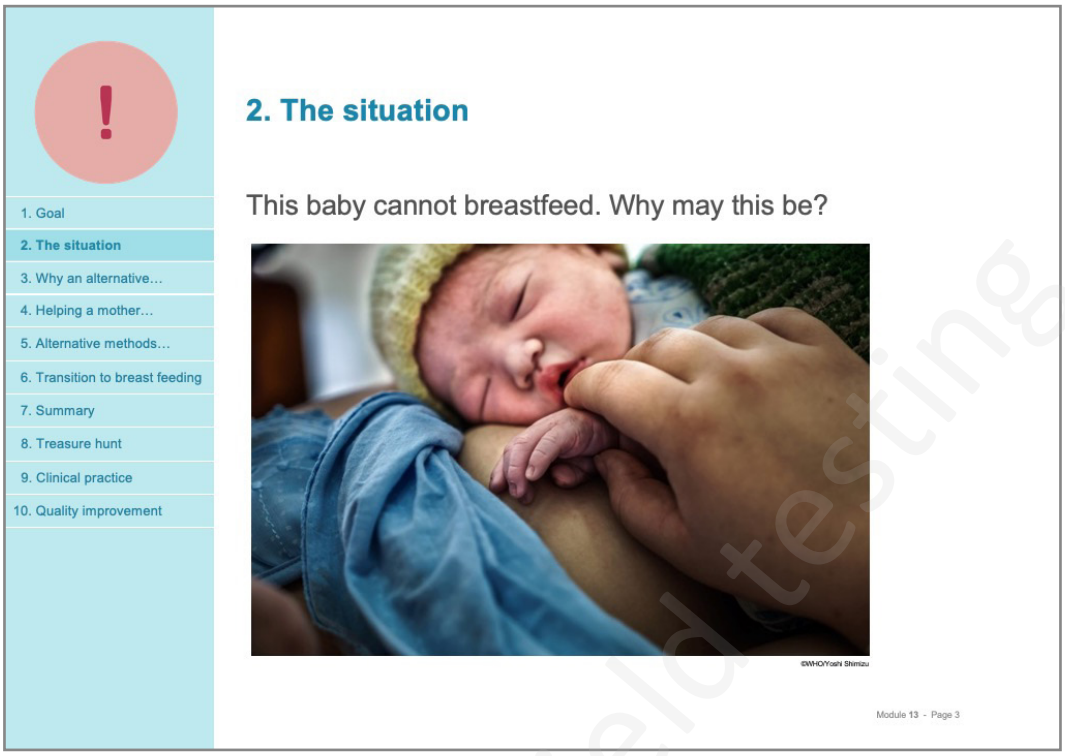
- Assess and classify newborns' feeding difficulties.
- Select the appropriate feeding method to feed a newborn unable to breastfeed.
- Counsel and give practical support for the alternative feeding method.
- Counsel and give practical support to transition to full breastfeeding.



Module 13 - Page 2

Go through slide
Ask for and answer questions

2. The situation



Learning objective: Learners gain overview of alternative methods of feeding and apply in daily work.

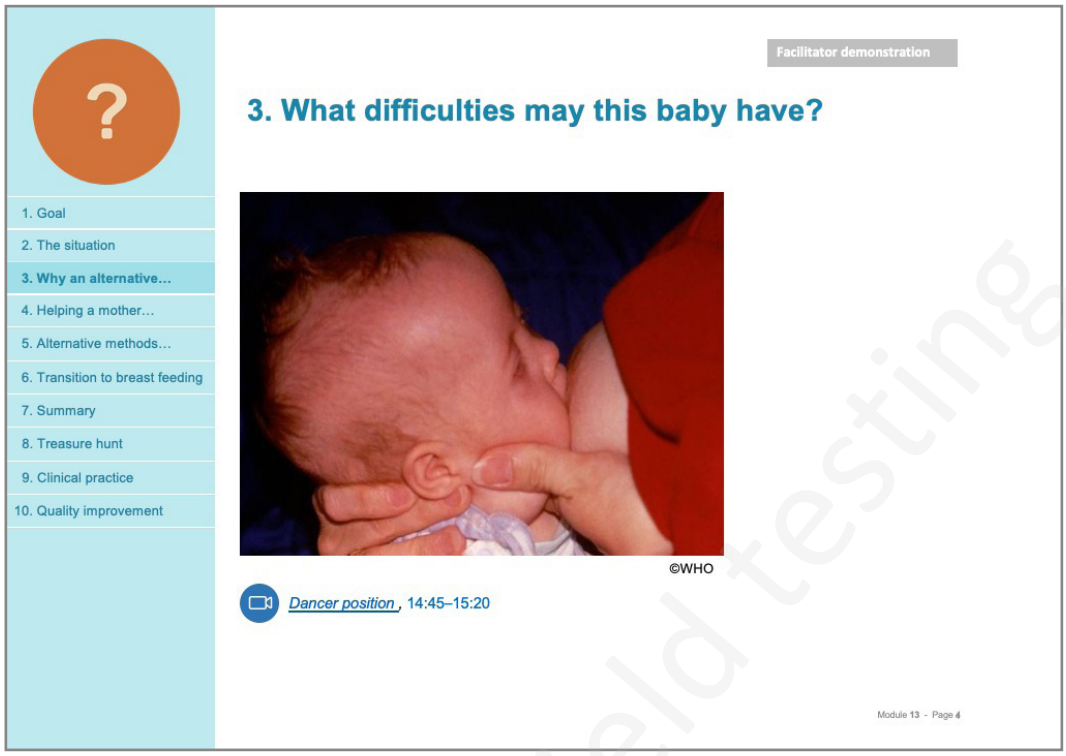
Ask

- **Why may this baby not be able to feed and need an alternative feeding method?**

Explain

- Premature, cleft palate and lip, neurological syndromes, mother or baby sick.
- Separation of mother and newborn, referred to another hospital, mother gone home or baby abandoned.
- In most cases babies have no difficulty feeding at the breast after birth.
  - A small number of babies may not be able to suckle and may need to be temporarily or permanently fed their mother's milk using alternative methods of feeding.
  - Mother's own breast milk is the milk of choice when using any alternative methods of feeding.
  - The need for alternative methods of feeding and the most suitable method should be individually assessed for each mother and baby.
  - The information should be documented in the newborn's records.

3. Why an alternative method



Ask

- **What difficulties may this baby have?**

Explain

- Winston has Down syndrome. He may be hypotonic (floppy) and need waking for feeds initially.

Ask

- **Can a baby with Down syndrome breastfeed?**

Explain

- Yes.
- Help the mother to position and attach the baby well. Some positions will be easier for a hypotonic baby. In the photo Winston is being held in the "dancer hold".

Demonstrate

Demonstrate using mannequin

- *The mother supports her breast and her baby's chin to stabilize the baby's jaw and maintain good attachment. She gently cups the baby's chin between her thumb and first finger and cups the remaining three fingers under her breast. Feedings may take a long time regardless of technique.*
- *The mother may need to express her milk and feed it to her baby in a cup.*
- *Avoid artificial teats and pacifiers, as these babies may find it very difficult to learn to suck from both a breast and an artificial teat.*
- *Some babies gain weight slowly even if they receive enough breast milk. They may have other health problems, for example, a cardiac problem.*

Show video

- ***Dancer position, Massage techniques to help babies with low tone breastfeed better*** *14.52–15.22*

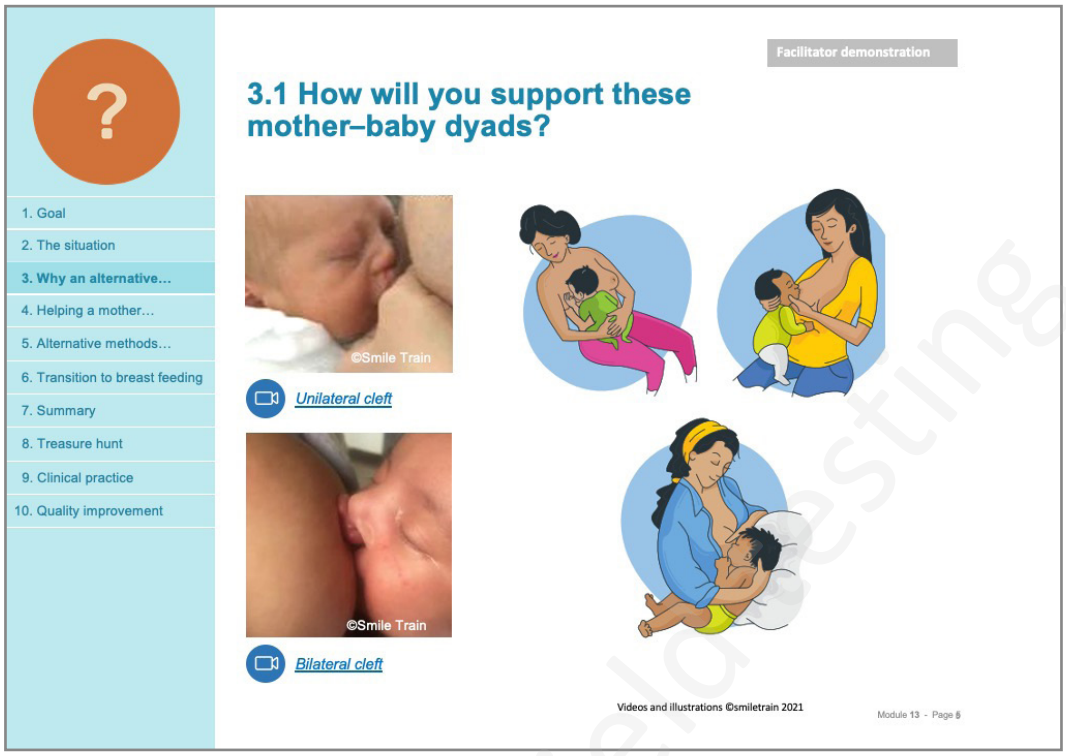
Ask

- **Can babies with other special needs or neurological syndromes breastfeed?**

Explain

- Often, yes. The principles of caring for babies with special needs are the same as for all other babies. However, these babies may need more time and patience, and their mothers need extra help and support.
  - Encourage the mother to begin breastfeeding as soon as possible after birth.
  - Position and attach the baby well and help the baby to take a big mouthful of breast.
  - It is important to let a baby explore the breast and try to attach in his own way. Many babies with disabilities manage much better than we expect.
  - Some newborns with Down syndrome like Winston or other neurological difficulties may be able to breastfeed without support.
  - Wake the baby for breastfeeds and stimulate to remain alert during feeding.

- If a baby is not able to breastfeed, breast milk is still very important. Also, encourage early and prolonged skin-to-skin contact.



Ask

- **Can newborns with cleft lip or palate breastfeed?**
  - Yes.

Show video

- ***Unilateral cleft***
- ***Bilateral cleft***

Ask

- **Reflect how you could support these mothers and babies.**
  - What is new knowledge for you in these videos?
  - Are there any skills or practices that are different from your current practice?
  - What provider's behaviours are different from your current practice?
  - Do the videos highlight a quality gap in your setting? If yes, update the POCQI form for alternative methods of feeding.

Ask

- **What difficulties may these babies have?**

Explain

- Many newborns with orofacial clefts can breastfeed but often need additional support.
- Allow the baby to explore the breast and attach himself.
- Some positions make it easier for mother and babies to breastfeed.

Demonstrate

Show these positions using a mannequin.

- *Modified underarm position or straddle position, with baby sitting upright facing mother with legs to either side. Support the baby's back with arm and head with hand.*
- *Mothers may need to express milk at the same time to increase flow.*
- *A special cup, spoon or other system is required for infants with cleft lip and palate who have been unable to achieve full breastfeeding.*

Ensure that mothers have practical support from trained and skilled health workers.

Ask

- **What can be some difficulties or complications when breastfeeding a baby with a cleft?**

Explain

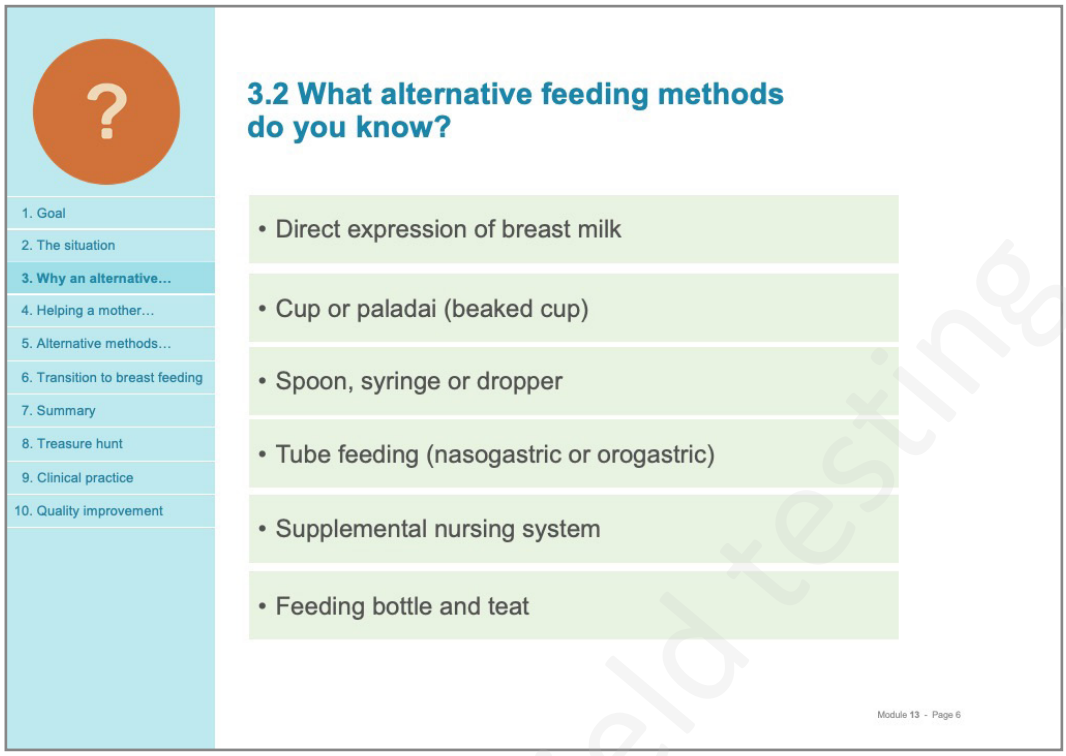
- Malnutrition if no early lactation, no feeding support for good attachment, no additional alternative feeding method if needed.
- Milk can pass through nose.
- Pneumonia if milk passes into lungs.
- Malnutrition is a major barrier to cleft surgery. Delayed surgery can lead to speech and hearing disabilities, sleep apnoea and other complications such as problems with dentition (teeth).This is why prompt competent feeding support is needed as soon as possible after birth. Refer the mother and baby for lactation support if you are unable to provide it.

Ask

- **How else do you need to support mothers and families?**

Explain

- Take time to support and find solutions to feeding problems in collaboration with mother or refer for specialized lactation support.
- Link mothers and families to support groups.
- Refer early for surgical treatment and support.
- Support the parents to overcome possible stigma related to cleft.
- Support nurturing care.
- Link mothers needing psychosocial support to appropriate services.



Ask

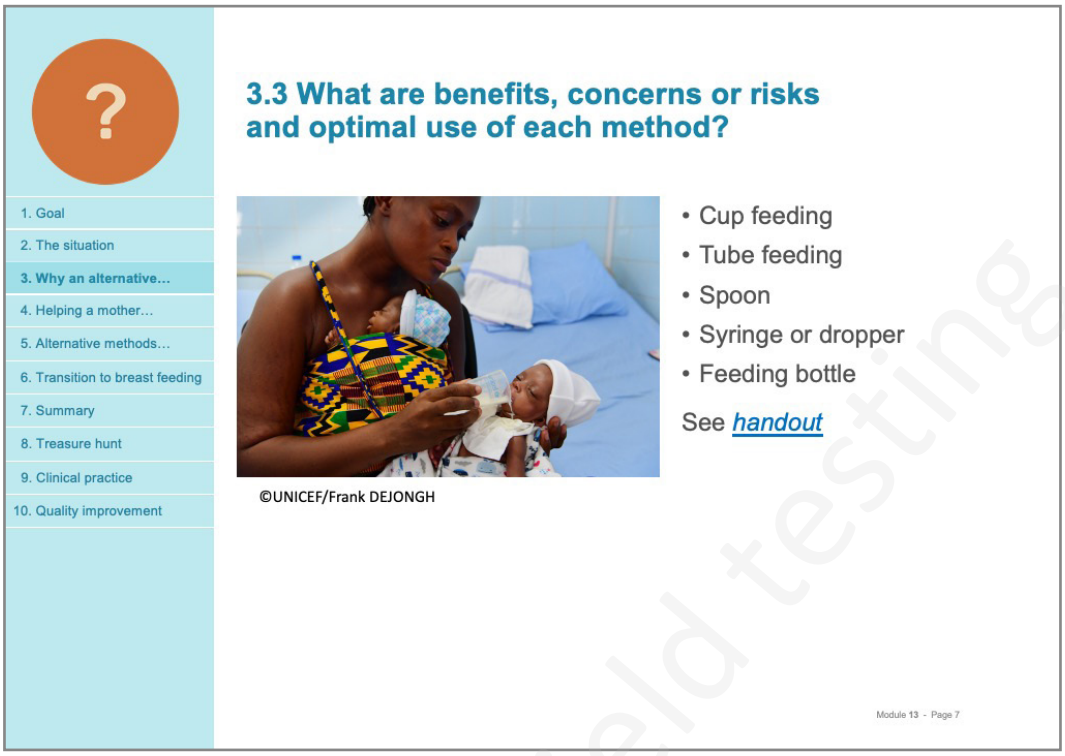
- **What other methods of feeding can be used if feeding at the breast is not possible?**
  - *Show answers by clicking through slide.*
  - Direct expression of breast milk
  - Cup or paladai
  - Spoon, syringe or dropper
  - Tube feeding
  - Supplemental nursing system
  - Feeding bottle and teat.

Ask

- **How do you choose the method suited to a baby?**

Explain

- The need for alternative feeding methods and the most suitable method should be individually assessed for each mother and baby.



Ask

- **For each alternative feeding method, what are the benefits, concerns or risks?**

Explain

- Review table in *handout on alternative methods of feeding.*


HANDOUT

ALTERNATIVE FEEDING METHODS

Method	Benefits	Concerns	Optimal use
Cup	Easy to teach, use and clean, globally available, inexpensive slightly better breastfeeding outcomes compared to bottles	Spillage, slower feeds, lower intakes, different oro-motor movements from breastfeeding	Preterm infants, late preterm and term infant supplementation, short or long-term use
Paladai a small, beaked cup	Easy to teach, use and clean, readily available in certain countries, low to moderate expense	Spillage, slower feeds, different oro-motor movements, risk of aspiration if milk is poured into the infant's mouth	Preterm infants, late preterm and term infant supplementation, short or long-term use
Feeding tube nasogastric or orogastric	Efficient, intake can be measured	Expensive, requires frequent replacement, no suckling or mouth movement, training for safe use, infants may fight and/ or remove tube as they mature	Very preterm infants with no suck-swallow-breathe coordination, long-term use
Finger feeding	Can be used to reward appropriate suck-swallow, may improve breastfeeding rates at discharge	Requires complex learning, slow, different oro-motor movements, the feeding tube and syringe should be replaced for each feed, increased medical waste	Neurologically compromised and preterm infants, short-term use
Spoon	Inexpensive, readily available, can discard or clean easily, can be used to capture colostrum during hand expression	Spillage, slow, different oro-motor movements from breastfeeding	Term or late-preterm infants with good suck-swallow coordination, short-term use
Dropper or syringe	Can be used alone or to supplement at breast at the corner of the mouth, can be used to collect colostrum	More expensive than cup or spoon, difficult to clean, increased medical waste, different oro-motor movements from breastfeeding	Term or late-preterm infants with good suck-swallow coordination, short-term use
Supplemental nursing system	Encourages latch and normal sucking, allows baby-led feeding and measurement of intake	Expensive, difficult to clean, awkward to use, moderately complex learning for parent	Term or late preterm infants with good suck swallow coordination, long-term use for adoptive nursing or supplementation
Bottle and teat	Efficient, slow flow teats mimic breastfeeding more closely than rapid flow teats	Expensive, difficult to clean, allows overfeeding, risk of aspiration with immature suck/swallow/ breathe coordination, different oro-motor movements	Any infant with some suck- swallow-breathe coordination, long-term use

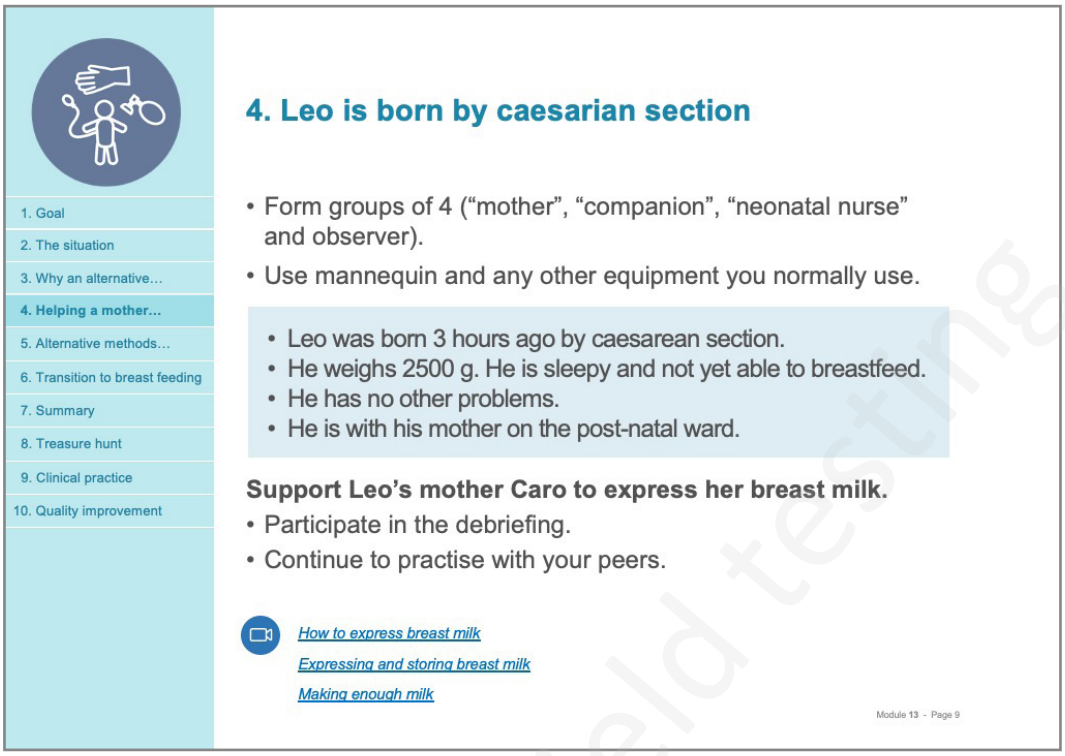
  - **Tube feeding** is needed for babies who cannot suckle and swallow. A baby can progress from tube feeding to other alternative methods of feeding to fully feeding at the breast.
  - **A syringe or dropper** can be used if a baby can swallow but not suck. Place a very small amount (not more than 0.5 mL at a time) in the baby's cheek and let the baby swallow that before giving more.
  - **Spoon feeding**. Very small amounts are given. The baby cannot control the flow, and so there is a risk of aspiration if the milk is fed quickly. Spoon-feeding large amounts of milk takes a lot of time, and the caregiver or baby may get tired before enough milk is taken. If a large spoon is used, then this is similar to cup feeding. A cup and spoon are easy to clean with soap and water.
  - **Direct expression of milk into the baby's mouth** is useful because it can be used by a weak baby. It does not require the baby to use a lot of energy. It can be done before the baby can coordinate sucking, swallowing and breathing. It can be done any time by the mother and needs no equipment. Also, it encourages skin-to-skin contact and breastfeeding. Some direct expression can be combined with cup feeding.
  - **Supplemental nursing system.** A feeding tube device consisting of a fine tube leading from a reservoir of breast milk, positioned with its opening just past the tip of the nipple so that, as the infant suckles at the breast, milk can be sucked through the tube to nourish the infant.

Ask

- **Who can remember about safe expressed milk storage?**
  - *Click through slide.*
  - *Check answers using handout.*

Source: CDC, 2019, adapted from Eglash A, Simon L. ABM Clinical Protocol #8: human milk storage information for home use for full-term infants. Revised 2017. Breastfeed Med. 2017;12:390–95. doi: 10.1089/bfm.2017.29047.aje

4. Helping a mother



***Brief and debrief, following** Methodologies for facilitation.*

Brief
Read scenario

Skills and performance
Learners demonstrate:

1. *Supporting mothers to express and safely store breastmilk. Advise mothers to:*
   - *Create a comfortable environment to facilitate the let-down reflex.*
   - *Wash hands.*
   - *Have a clean bowl/container ready to catch the milk.*
   - *Massage the whole breast gently.*
   - *Shaping a “C” around the breast with fingers, push back toward the chest wall away from the areola.*
   - *Push fingers towards the chest and squeeze fingers together rhythmically, then paus.*
   - *Express milk from both breasts.*
   - *Expect that a session will last 10–20 minutes as milk flow gradually decreases.*

2. *Effective communication when explaining safe expression and safe storage of breastmilk.*
   - *Explain how to safely store expressed milk.*

This simulation uses a breast model. Ensure respectful behaviour and the mother’s dignity, that is, breasts covered with shawl or cloth.

Debrief

Ask

- **Did the health worker communicate effectively and with respect?**
- **Was there adequate privacy?**
- **Did the health worker explain why the mother needs to express her milk?**
- **Did the health worker ask the mother to wash her hands?**
- **Did the health worker ensure that the mother was comfortable?**
- **Did the health worker give guidance on all steps?**

Address any issues relating to norms, behaviours or concerns about practices now, in this safe environment. Examples of concerns:

- *forgets preparation of the equipment*
- *demonstrates careless hygiene for cup or milk preparation*
- *prefers tube feeding and nothing else because it is easier and faster*
- *expression of breast milk: omits hand hygiene, omits suggesting breast massage, does not explain how to do compression.*
- *demonstrates directly on the mother's breast, using "hands-on" technique without permission.*
- *does not correct mother's movement if sliding fingers from breast to areola*
- *forgets to tell her how long to express and how to know when to stop.*

Demonstrate

If learners were unable to perform correctly, demonstrate any difficult steps.

- ***How to express breast milk***
- ***Expressing and storing breast milk***
- ***Expressing enough milk***

Learners should review videos and handouts in their own time.

For learners needing additional explanation, demonstration and practice

Explain

- Create a comfortable environment to facilitate the let-down reflex.
- Ensure correct hand hygiene.
- Ensure a clean bowl/container to catch the milk.
- Support mother to massage the whole breast gently.
- Shape a "C" around the breast with fingers, push back toward the chest wall, away from the areola.
- Push fingers towards the chest and squeeze fingers together rhythmically, then pause.
- Express milk from both breasts.
- Expect that a session will last 10–20 minutes as milk flow decreases.

Show video

- ***Support a mother to express the first milk***

Ask

- **What is new knowledge for you in this video?**
- **Are there any skills or practices that are different from your current practice?**
- **What provider's behaviours are different from your current practice?**
- **Does this video highlight a quality gap in your setting?** If yes, update the POCQI form for alternative methods of feeding.

Ask

- **What did you suggest to Caro to help her relax so that her milk flows more easily?**

Explain

- Apply warm compresses to the breast (for example, warm towels).
- Massage back and neck before expressing.
- Massage breast and nipples.

Ask

- **What do local mothers do?**
  - *Discuss.*
  - *Encourage learners to demonstrate any local methods of massage, if these are suggested.*

Explain

- Remember to ask the mother if she or her family knows of any ways to help her milk to flow.
- It is easy to teach a mother how to massage her breasts and to teach her family to massage her back and neck.

Demonstrate

Demonstrate (on yourself or on a breast model) the different ways that a mother can massage her breasts.

- *Massage or stroke the breasts lightly and very gently. Some mothers find that it helps if they roll a closed fist over the breast towards the nipple.*
- *Stroke the nipple and areola gently with her fingertips or with a comb or anything else that gives a pleasant sensation.*

Demonstrate

Ask for a volunteer. Give these instructions aloud while demonstrating back massage on the volunteer:

- *The mother sits down, leans forward, folds her arms on a table in front of her and rests her head on her arms. Her breasts should hang loose and unclothed. Place a towel or piece of cloth on her lap. The helper works down both sides of the spine at the same time, from the neck to just below the shoulder blades. She uses her closed fist with her thumbs pointing forwards. She presses firmly, making small, slow circular movements with her thumbs. The helper continues for two or three minutes.*
- *Ask learners to work in pairs and massage each other's backs. This method of massage is especially useful for mothers of preterm newborns.*

5. Alternative methods

Show video on slide

Explain

- Carlo has cleft lip and palate. His mother is feeding expressed breast milk by a special spoon. Since birth he has been unable to attach well. Spoons and adapted bottles are used for babies with cleft who cannot attach to the breast.

Ask

- **What is new knowledge for you in this video?**
- **Are there any skills or practices that are different from your current practice?**
- **Does this video highlight a gap in your setting?** If yes, update POCQI form for alternative methods of feeding.

Explain

- Hoang was born to Hoa by spontaneous vaginal delivery. Hoa expressed colostrum immediately at birth before being taken back to theatre for an emergency procedure. Grandmother immediately feeds colostrum to Hoang.

Ask

- **Why is this important?**
  - *Prevents infection and hypoglycaemia.*

Show video

- ***Expressing the first milk***

This video shows well the technique for massage and correct expression techniques linked to physiology, as learned in the module "Breastfeeding: ensuring a good start". Ask learners to review it again in their own time.

Ask

- **What is new knowledge for you in the video?**
- **Are there skills or practices that are different from your current practice?**
- **What provider's practices are different from your current practice?**
- **Does this video highlight a quality gap in your setting?** If yes, update the POCQI form for alternative methods of feeding.

Demonstrate

Show each step, using a breast model or your own breast and newborn mannequin.

- *Ask for cofacilitator or learner to play the mother.*
- *Use effective communication.*
- *Ensure privacy and dignity, using a shawl or cloth.*

Ask learners to practise in their own time with their peers.

Ask

- **Why is cup feeding a useful method to feed a newborn?**

Explain

- Cup feeding is a safe and useful method of feeding breast milk to a newborn baby.
- The newborn can take the amount of milk he wants, at his own pace.
- A cup is a simple piece of equipment. Cups are easy to clean.
- A cup allows the baby to use his or her tongue and to experience tastes.
- It encourages coordinated breathing/sucking/swallowing.
- Cup feeding allows a newborn to continue to have breast-milk feeding even if separated from the mother.

Show video

- ***Cup feeding***

Ask

- **What is new knowledge for you in this video?**
- **Are there any skills or practices that are different from your current practice?**
- **What provider's behaviours are different from your current practice?**
- **Does this video highlight a quality gap in your setting?** If yes, update the POCQI form for alternative methods of feeding.

Explain

- Always ensure effective communication, handwashing, consent, safety.
- Mothers should be taught how to safely cup feed their babies. Teach in a way that gives them confidence to do it themselves. If a mother and baby are separated, teach a family member such as the father or grandmother to safely cup feed the newborn.

Show video

- ***Cup feeding your small baby***

OR *Ask learners to review the video in their own time.*

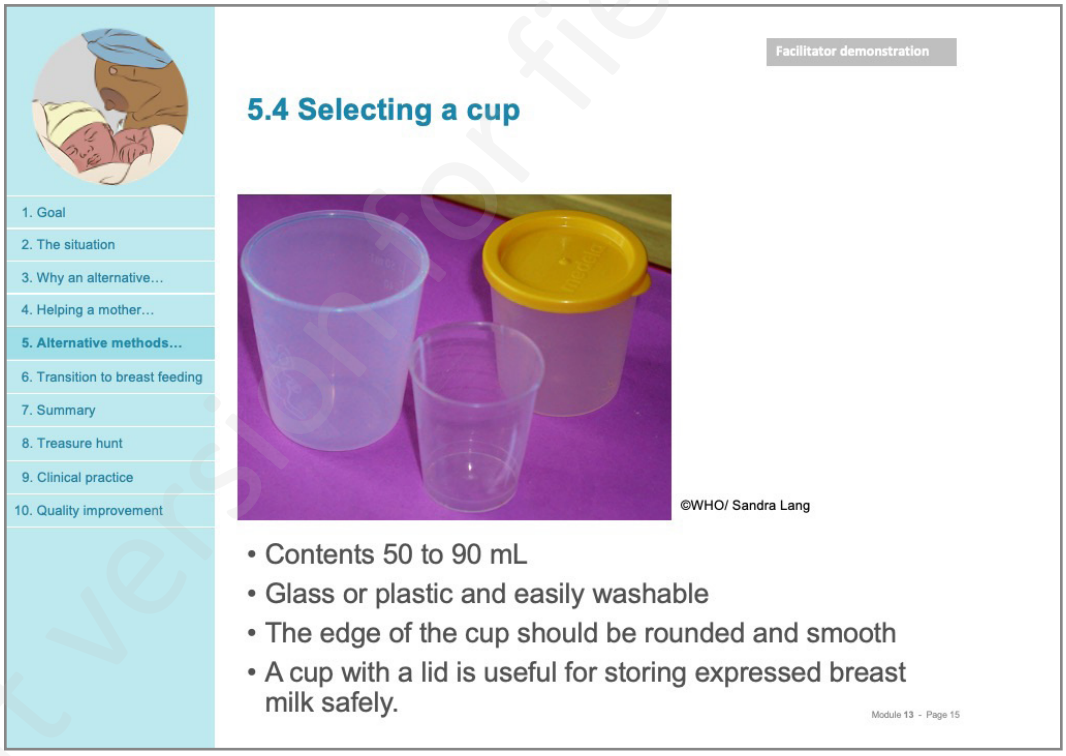
Ask

- **What is new knowledge for you in this video?**
- **Are there any skills or practices that are different from your current practice?**
- **What provider's behaviours are different from your current practice?**
- **Does this video highlight a quality gap in your setting?** If yes, update the POCQI form for alternative methods of feeding.

Demonstrate

Show how to feed a baby by cup. Demonstrate each point, using a mannequin and a volunteer or cofacilitator to play the mother.

- *Wash hands with soap and water.*
- *Prepare cup.*
- *Measure a calculated quantity of milk into the cup.*
- *Hold the baby in a semi-upright, sitting position on lap.*
- *Hold the cup of milk to the baby's lips.*
- *Rest the cup lightly on the lower lip.*
- *Touch the edge of the cup to the outer parts of the upper lip.*
- *Tip the cup so that milk just reaches the baby's lips.*
- *Do not pour milk into the baby's mouth. This can cause choking and aspiration (milk in lungs).*



Ask

- **What type of cup do you use in your practice?**

Explain

- Some criteria you should apply in choosing a cup:
  - Contents 50 to 90 mL
  - Glass or plastic and easily washable
  - The edge of the cup should be rounded and smooth.
  - A cup with a lid is useful for storing expressed breast milk safely.

Show local safe cups to learners.

Explain

- Some cups also have lips or spouts.

Show local safe examples if used in your context.

Ask

- **What does baby-led feeding mean?**

Explain

- Encourage the mother to observe her infant's signs of interest in feeding.
- Ensure that the baby is fully awake, alert and interested in feeding, showing cues.
- Let the baby lap the milk at his own pace.
- Stop when the baby has had enough.

Ask

- **Hoang is 3 days old and weighs 2300 g. His mother is expressing milk well and is growing in confidence. How much milk should Hoang be given at each feed on Days 3, 4 and 5?**

Explain

- Calculate mL per kg/day according to weight and age. Then:
- If 3-hourly feeds, divide the total by 8 to give the amount per feed.
- If 2-hourly feeds, divide the total by 12 to give the amount per feed.

Ask

- **How often should feeds be given?**

Explain

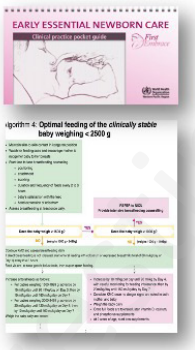
- Depends on gestational age of baby and feed tolerance.
- Follow medical instructions documented in notes.
- Start every 3 hours.

Use the section "Quantity to feed by cup" on PCPNC, page K6, or algorithm or application recommended by your ministry of health.

5.7 Calculating feeds for Hoang

Day 3 = (100*2.3)/8
Day 4 = (120*2.3)/8
Day 5 = (140*2.3)/8

- Frequency of feeding depends on gestational age of baby and feed tolerance. Follow medical instructions documented in notes and feeding charts.
- Start every 3 hours.



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These volumes are for stable small babies. Newborns who are sick will be covered in the WHO Essential Care of Small and Sick Newborns course. Some newborns with asphyxia will be fluid-restricted.

Day of life	Fluid requirements (in ml/kg per day)		
	2000–2500 g	1500–1999 g	1000–1499 g
DAY 1	60	60	60
DAY 2	80	75	70
DAY 3	100	90	80
DAY 4	120	115	90
DAY 5	140	130	110
DAY 6	150	145	130
DAY 7	160	160	150

Ask

- **How do you do this in your health facility? Discuss.**

Demonstrate

Demonstrate or ask a learner to demonstrate if they have experience

- The mother *expresses her breast milk into a sterile container and then measures a quantity of milk into a cup.*
- *If an exact amount is required, a health worker should use a syringe to put the right amount of milk into the cup.*
- *The mother can measure the milk using a plastic container with mL marked on it or a teaspoon (5 mL) or a dessert spoon (10 mL) of liquid. Show the learners the size of the spoon.*
- *If she needs approximately 30 mL for a feed, she can put three 10 mL spoonfuls into the cup every 2 to 3 hours.*
- *The mother can put a little extra milk in each day.*
- *The baby is likely to take different amounts at each feed.*
- *Weigh this baby daily. Record weight and plot it on growth and feeding charts.*
- *A health worker can put a mark on the outside of a small jar or cup (with indelible pen or nail varnish, for example) to indicate the 30 mL level. In some countries cups or other plastic containers are available with mL marked.*

Brief and debrief, following *Methodologies for facilitation.*

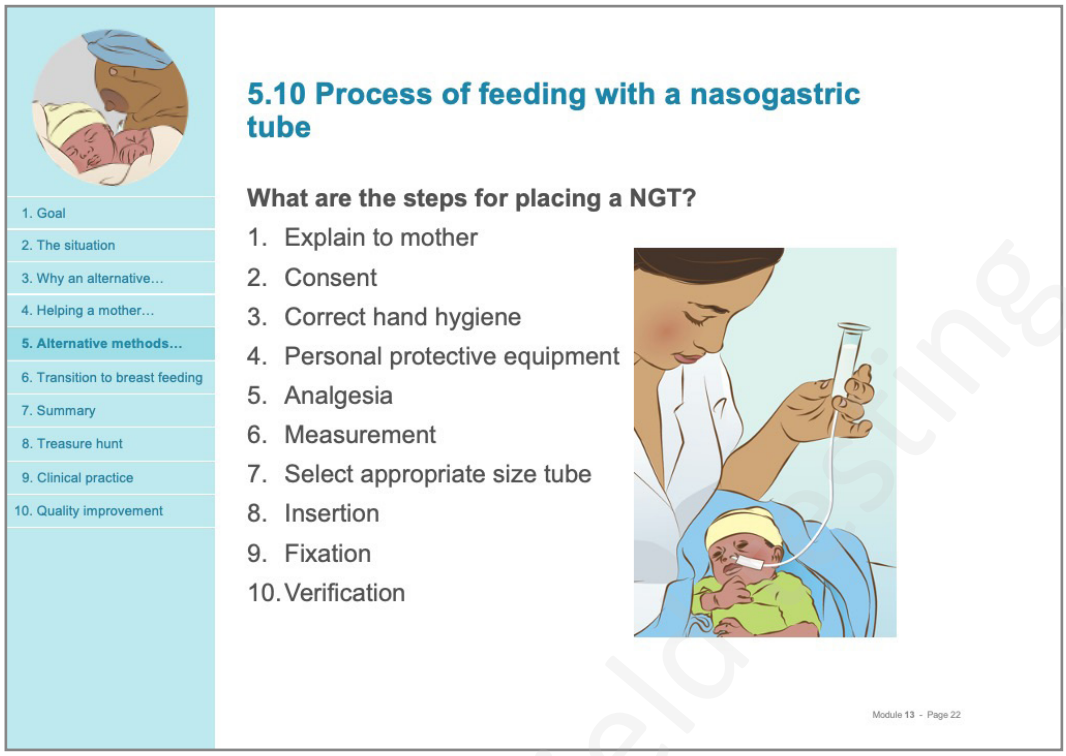
Brief
Read scenario

Skills and performance
Learners demonstrate:

1. *Effective and respectful communication, explaining clearly to mother and companion the need for an alternative feeding method*
2. *Decision-making if cup feeding is the relevant choice*
3. *Support for the mother for clean and safe cup feeding (Follows all steps in safe preparation of cup, positioning baby safely, placing cup safely, ensuring responsive feeding, following the newborn’s cues, watching for choking or colour changes)*
4. *Decision-making to stop if cup feeding is not safe.*

Debrief
Note any practices of concern and emphasize correct practices in step-by-step demonstrations. Address any issues relating to norms, behaviours or concerns about practices now, in this safe environment. Examples of concerns:

- *careless hygiene for cup or milk preparation*
- *human milk defrosted in microwave*
- *forgets to prepare the equipment*
- *Peter not held in sitting/upright position*
- *pours the milk into the baby’s mouth instead of allowing the baby to lap from the cup*
- *ignores the baby’s cues while cup feeding*
- *persists with cup feeding even though Peter is not tolerating cup feeds and is choking and cyanosed.*



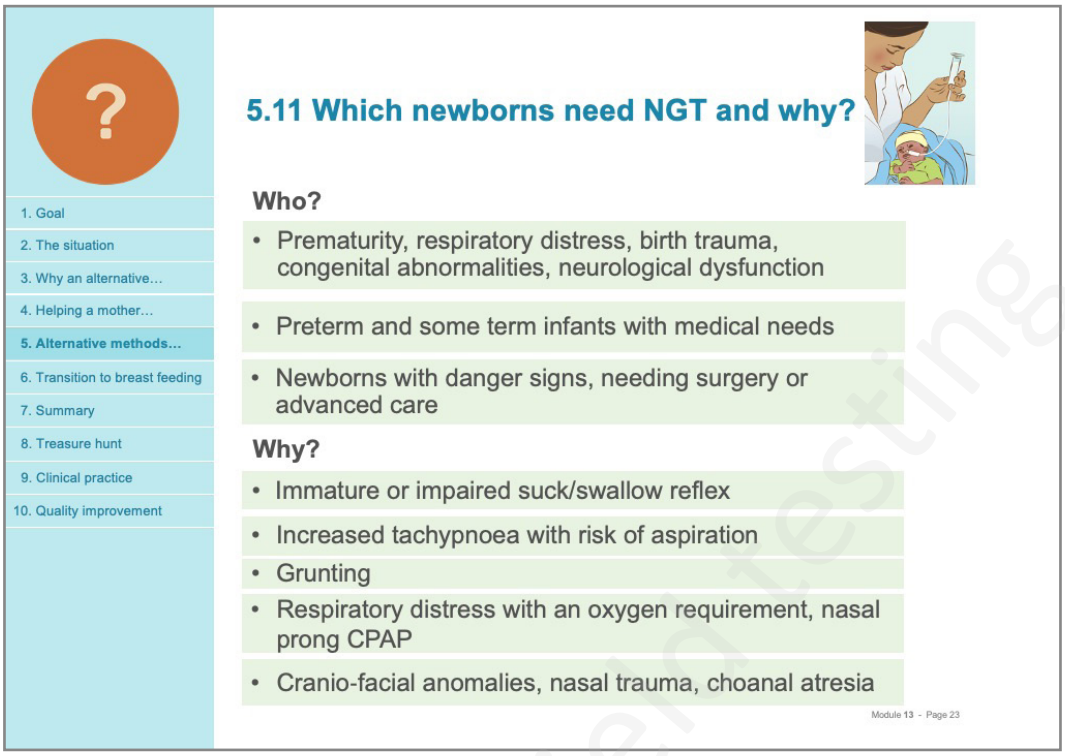
In-service

Ask

- **What are the steps in placing a nasogastric tube?**

Explain

1. Explain to mother
2. Consent
3. Correct hand hygiene and infection prevention
4. Personal protective equipment
5. Analgesia
6. Measurement of tube length
7. Select appropriate size tube
8. Insertion
9. Fixation
10. Verification.



Ask

- **Which newborns may need a nasogastric or orogastric tube?**
  - *Show answers by clicking through slide.*

Explain

- Prematurity, respiratory distress, birth trauma, congenital abnormalities and neurological dysfunction.
- Many preterm and some term infants may need an intragastric tube (IGT) for feeding, administration of medication, following a surgical procedure or for gastric decompression.
- Newborns who have danger signs or need surgery need to be referred urgently for advanced care. An NGT may need to be placed before safe referral and left on open drainage.
- Nasogastric tubes should be preferred over orogastric tubes
- You will learn more about this in the WHO "Essential Care of Small or Sick Newborns" course.

Ask

- **Why may a newborn need an IGT?**

Explain

- Pre-term: immature suck/swallow reflex
- Neurological disease: impaired sucking reflex
- Respiratory support: increased tachypnoea with risk of aspiration
- Gastric decompression

- **Use orogastric tube for the following indications:**
  - Respiratory distress
    - respirations >60 bpm
    - grunting
    - recession
  - Babies with an oxygen requirement
  - Nasal prong CPAP (continuous positive airway pressure)

- Nasal trauma
- Cranio-facial anomalies
- Choanal atresia.

Note: If the cadre of health workers you are training is not allowed to place tubes, then SKIP this section.

Ask

- **How will you explain the need for an IGT to a mother and family?**

Explain

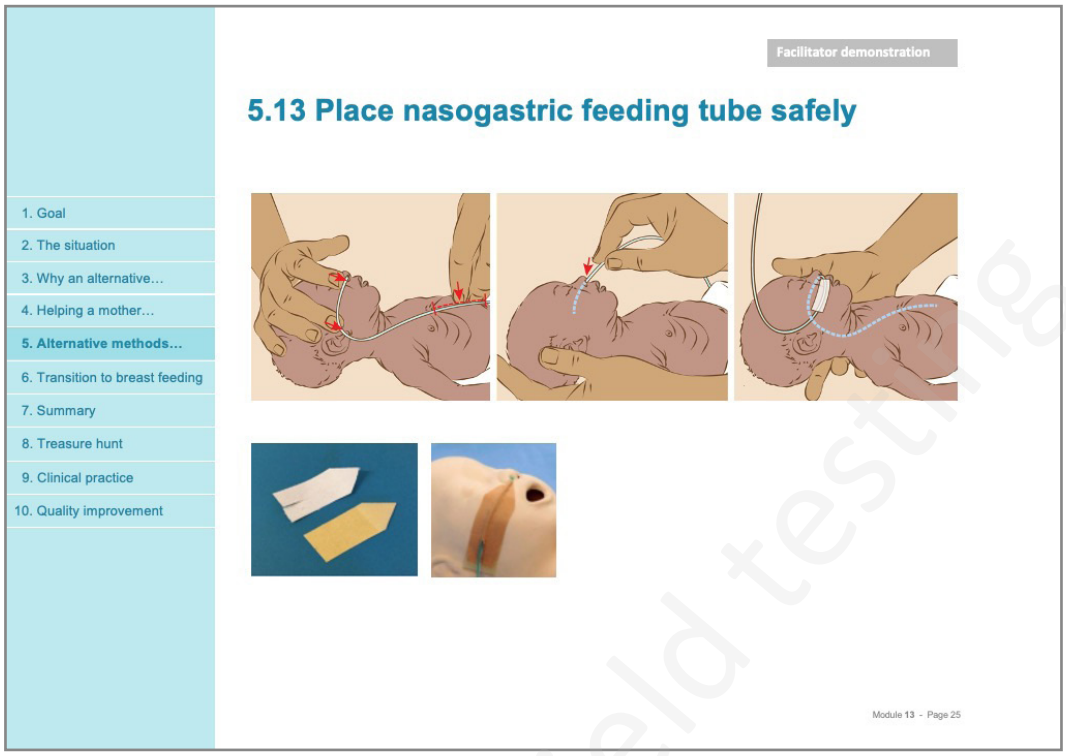
- Parents should be advised why the baby needs the IGT and the procedure should be discussed. Answer all their questions.
- Advise that they may stay while the tube is placed or leave and return when it is finished (their choice).
- Following the procedure reassure the parents and answer any questions.

Note: If health workers do not have access to nasogastric tubes in their context, then the newborn will need referral to the next level of care.

Show video

- ***Inserting a nasogastric tube***

- **What is new knowledge for you in this video?**
- **Are there any skills or practices that are different from your current practice?**
- **What provider's behaviours are different from your current practice?**
- **Does this video highlight a quality gap in your setting?** If yes, update the POCQI form for alternative methods of feeding.



Ask

- **What equipment and supplies do you need for insertion of a nasogastric tube?**

Explain

- *Show pieces of equipment as learners list them.*
  - Sterile intragastric tube (sizes 5, 6 and 8),
  - 5 ml syringe
  - Tapes
  - pH strips
  - Scissors
  - Expressed breast milk or sucrose.

Ask

- **How do you reduce stress and comfort the baby during placement of the tube?**

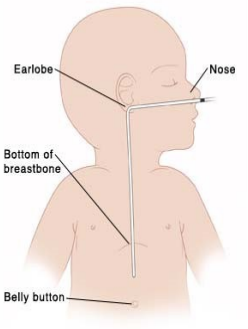
Explain

- Give expressed breast milk or sucrose.
- Offer pacifier.
- Wrap/swaddle.
- Ask caregiver or nurse to support the baby.

Demonstrate

Show how to measure the length of tube to insert. With infant's head positioned midline, measure length of tube insertion as follows:

- *Nasal tube (NGT): Distance from tip of **N**ose to tragus/**E**ar lobe plus distance from ear lobe to **M**idway between apex xiphoid and **U**mbilicus. Use "**NEMU**" to remember how to measure.*
- *Oral tube (OGT): Distance from corner of mouth to tragus/ear lobe plus distance from ear lobe to midway between apex xiphoid and umbilicus*
- *Record measurement obtained.*



Demonstrate *Show insertion of nasogastric tube step-by-step. Do not take shortcuts.*

Ask

- **What are the important steps in this procedure?**

Demonstrate

Point out each step while demonstrating:

1. *Gain consent.*
2. *Wash hands correctly.*
3. *Put on appropriate personal protective equipment.*
4. *Swaddle infant to provide comfort; offer pacifier if infant normally has one or give expressed breastmilk or sucrose*
5. *Gently check nostrils for patency.*
6. *Select the appropriate size gastric tube. For the majority of infants, this will be size 6 French, but size 8 French for large infants or those requiring gut drainage.*
7. *Gently insert the tube in a smooth, swift motion, advancing slightly down and towards the ear on that side, to the marked length.*
8. *Do not force the tube. If resistance is felt or the tube comes back via the mouth or other nostril, then stop the procedure and allow the child to recover before any further attempts.*
9. *If a tube cannot be inserted after two attempts, a senior nurse colleague may make one further attempt. If still unsuccessful, discontinue procedure, notify medical staff and document in clinical record.*
10. *Fix the tube in place and explain to the mother when she should call staff.*

Ask

- **How do you check that the tube is correctly sited?**

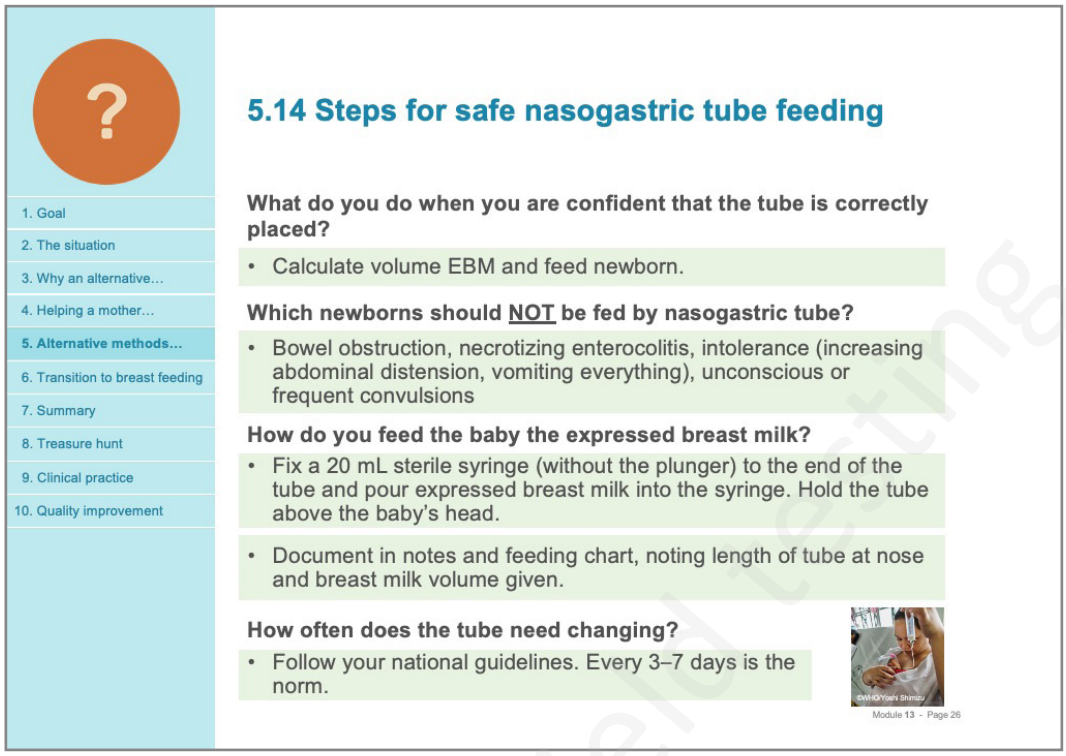
Explain

- Check placement by aspirating gastric contents.
- Aspirate tube gently (0.5 mL) and test with the pH strip. Correct position is confirmed when the pH reading is ≤5.
- Record site of tube, tube length and pH of the aspirate in the newborn's notes and observation chart.

- Presence of aspirate alone does not guarantee correct placement. Some medications, frequent feeds and continuous feeding may alter the pH and/or the colour of the aspirate.

- The "whoosh" test (injecting air down the tube and listening) is no longer considered safe practice and should not be used to confirm correct tube placement.

- This is an introduction and overview of gastric tube insertion. You will learn more and gain competence and skills as part of the WHO "Essential Care for Small or Sick Newborns" course.



Ask

- **What do you do when you are confident that the tube is correctly placed?**
  - *Check answers.*

Explain

- Calculate volume of expressed breast milk and feed newborn.
  - On a standard table, look up the volume of expressed breast milk that the baby needs daily according to weight and age.
  - Calculate amount for each feed:
    - If 3-hourly feeds, divide the total by 8 to calculate the amount per feed.
    - If 2-hourly feeds, divide total by 12 to calculate the amount per feed.
- Use the section "Quantity to feed by nasogastric tube or cup" in PCPNC, page K6, or algorithm 4 or application recommended by your ministry of health.
- Clinician should prescribe the total volume and frequency in the baby's notes according to how the baby is tolerating feeds and the newborn's growth (see growth charts and daily weight progression).

Ask

- **Which newborns should NOT be fed by nasogastric tube?**

Explain

- Bowel obstruction
- Necrotizing enterocolitis
- Intolerance (increasing abdominal distension, vomiting everything)
- Unconscious or frequent convulsions.

Ask

- **How do you feed the baby the calculated volume of expressed breast milk?**

Explain

- When tube placement has been verified, fix a 20 mL sterile syringe (without the plunger) to the end of the tube, and pour expressed breast milk into the syringe. Hold the tube above the baby's head and allow the milk to flow by gravity.

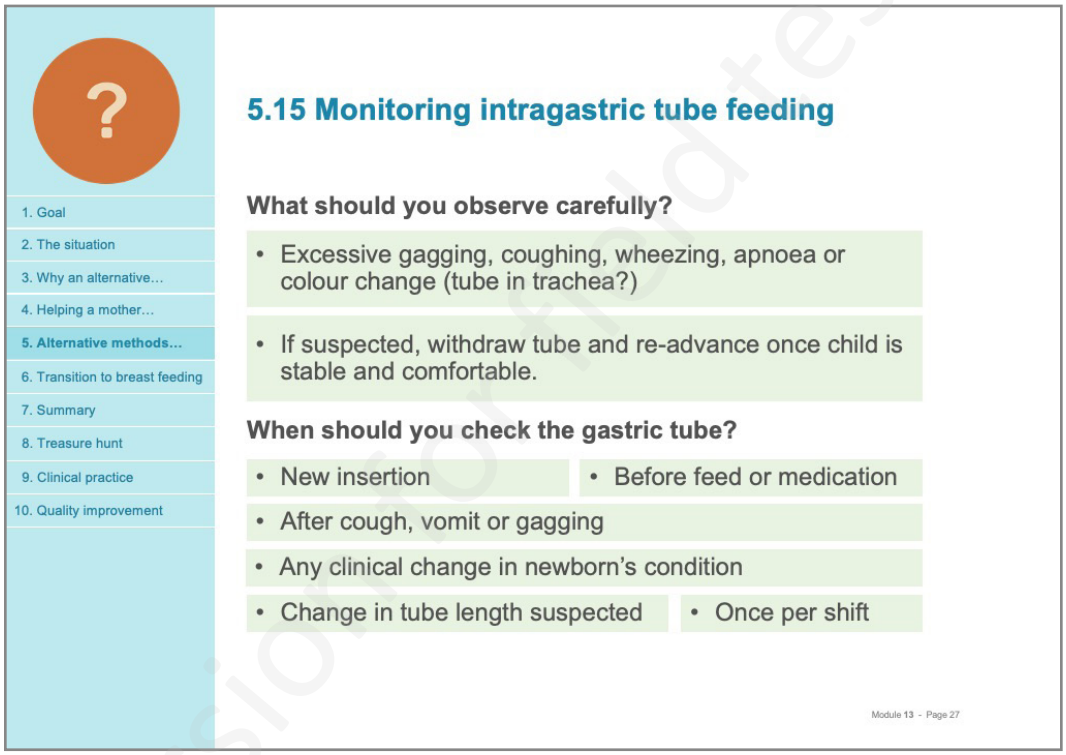
- Document in notes and feeding chart, noting length of tube at nose and amount of breast milk fed.

Ask

- **How often does the tube need changing?**

Explain

- Follow your national guidelines. Every 3–7 days is the norm.



Ask

- **What do you need to watch for if a newborn has a gastric tube in place?**

Explain

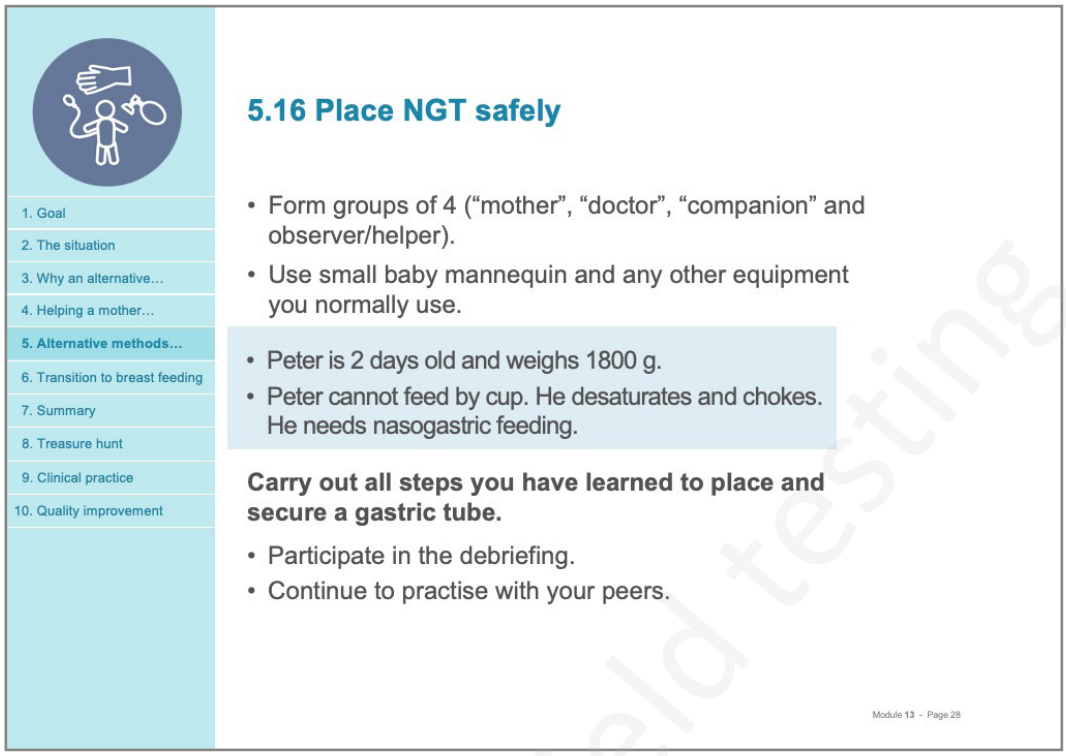
- To assure that the tube is NOT in the airway:
  - Watch carefully for excessive gagging, coughing, wheezing, apnoea or colour change.
  - If you suspect that the tube is in the airway, withdraw the tube and re-advance once the child is stable and comfortable.

Ask

- **When should a gastric tube be checked?**

Explain

- Check on:
  - New insertion
  - Before feed or medication
  - After cough, vomit or gagging
  - Any clinical change in newborn's condition
  - Change in tube length suspected
  - Once per shift in any case.



In-service

Note: Skip if learners are not allowed to place gastric tubes.

Brief and debrief, following *Methodologies for facilitation.*

Brief
Read scenario

Skills and performance
Learners demonstrate:
1. *Effective communication, explaining why the newborn needs a gastric tube and gaining the mother's consent and cooperation*
2. *Safe siting of nasogastric tube*

Incorrect practices can cause harm. If you observe any harmful practices, STOP the learner without embarrassing them, asking the observer for feedback and then giving positive and constructive feedback and demonstrating how to perform each step safely. Allow the learner to repeat the step.

Debrief
Address any issues relating to norms, behaviours or practices now, in this safe environment. Concerns may include:
- *no consent, no explanation*
- *poor infection prevention practices*
- *no breast milk or sucrose given to baby*
- *continues placing tube when baby is coughing or desaturating*
- *handles baby roughly or does not consider preventing and alleviating discomfort.*

In-service

Skip if health workers learners are not allowed to place IGT.

Brief, and debrief following *Methodologies for facilitation.*

Brief
Read scenario

Skills and performance
1. *Correct calculation of feeding volumes*
2. *Monitoring of gastric tube*
3. *Supporting the mother to safely fed her newborn using a gastric tube.*

Incorrect practices can cause harm. If you observe any harmful practices, STOP the learner without embarrassing them, asking observer for feedback and then giving positive and constructive feedback and demonstrating safely each step. Allow the learner to repeat the step.

Debrief
Address any issues relating to norms, behaviours or practices now in this safe environment. Concerns may include the following:
- *poor communication using judgemental language or commands*
- *does not allow mother to carry out steps herself*
- *negative feedback*
- *continues feeding if baby coughing or desaturating.*
- *rough handling*

Show video

- ***Feeding with a gastric tube***

Ask

- **What is new knowledge for you?**
- **Are there any skills or practices that are different from your current practice?**
- **What provider's behaviours are different from your current practice?**
- **Does this demonstration highlight a quality gap in your setting?** If yes, update the POCQI form for alternative feeding.

6. Transition to breast feeding

Explain

- You have learned about care of the small newborn in the "Small newborn "and "Kangaroo mother care" modules.
  - It is important to practice counselling a mother how to introduce a low-birthweight baby to the breast gradually, using the same principles of positioning and attachment learned in "Breastfeeding: ensuring a good start".
  - Feeding at the breast is guided by the infant's competence and stability rather than by a certain gestational/postnatal/postmenstrual age or weight.
  - It is important to recognize discrete signs of the transition from deep to active sleep and waking up.
  - Guide the mother not to interrupt the deep sleep stage just for routine feeding.
  - Encourage the mother to observe her infant's signs of interest in rooting and sucking and to breastfeed when her infant shows such signs.

Further reading

Oral stimulation for promoting oral feeding in preterm infants

Oromotor stimulation and its application in the care of preterm neonates. ***Asian Journal of Nursing Education and Research. 2021 April – June. 11(2):171.***

Explain

- In many newborn units, oromotor stimulation is used to promote earlier feeding in newborns.

See some of these techniques in video

- ***Massage techniques to help babies with low tone breastfeed better***

- There are eight steps:
  1. Massage of cheeks to improve range of motion and strength of cheeks and improve lip seal – 30 sec.
  2. Lip roll to improve range of lip motion and seal – 30 sec.
  3. Lip curl or lip stretch to Improve lip strength, range of motion and seal – 30 sec.
  4. Gum massage to improve range of motion of tongue, stimulate swallow and improve suck – 30 sec.
  5. Massage of lateral borders of tongue/cheek to improve tongue range of motion and strength – 15 sec.
  6. Midblade of tongue/palate to improve tongue range of motion and strength and improve suck – 30 sec.
  7. Elicit a suck to improve suck and soft palate activation – 15 sec.
  8. Support for non-nutritive sucking to improve suck and soft palate activation – 2 min.
  9. Non-nutritive breastfeeding has been shown to increase milk supply and duration of breastfeeding post discharge.

Ask

- **How long does it take for a newborn to transition to full breastfeeding after receiving alternative feeding?**

Explain

- Transition to exclusive breastfeeding will depend upon the degree of feeding maturity, medical complications and nutritional requirements for appropriate growth.
- The most vulnerable period for breastfeeding progression and maintenance appears to be the first month after discharge. The successful transition to full direct breastfeeding depends upon the extent to which the mother has established an adequate milk supply and how much breastfeeding she has done.
- Mothers who have chosen to provide milk and/or breastfeed in the neonatal ward should be counselled regarding the importance of continuing exclusive human milk feedings (with or without fortifier as directed) for about 6 months corrected age (term plus postnatal age).
- Support can be hands-off or hands-on, depending on the mother's culture, needs or specific requests.
- Small or preterm infants often require additional head and neck support and for the latch and infant's face to be easily visible to the mother to assess the infant's safety and milk transfer.
- Correct attachment may be difficult for small, sick or preterm infants and should be taught and observed frequently until both the mother and the infant are comfortable with the latch.

Ask

- **What are the four key points for good positioning?**

Demonstrate

Show each step on small mannequin or doll.

- *Baby's head and body in line*
- *Baby held close to mother's body*
- *Baby's whole body supported*
- *Baby approaches breast, nose to nipple.*

Ask

- **And which is especially important for a small baby?**
  - Whole body supported.

Show video

- ***A small baby's feeding journey***
- ***Breastfeeding the small baby***

Ask

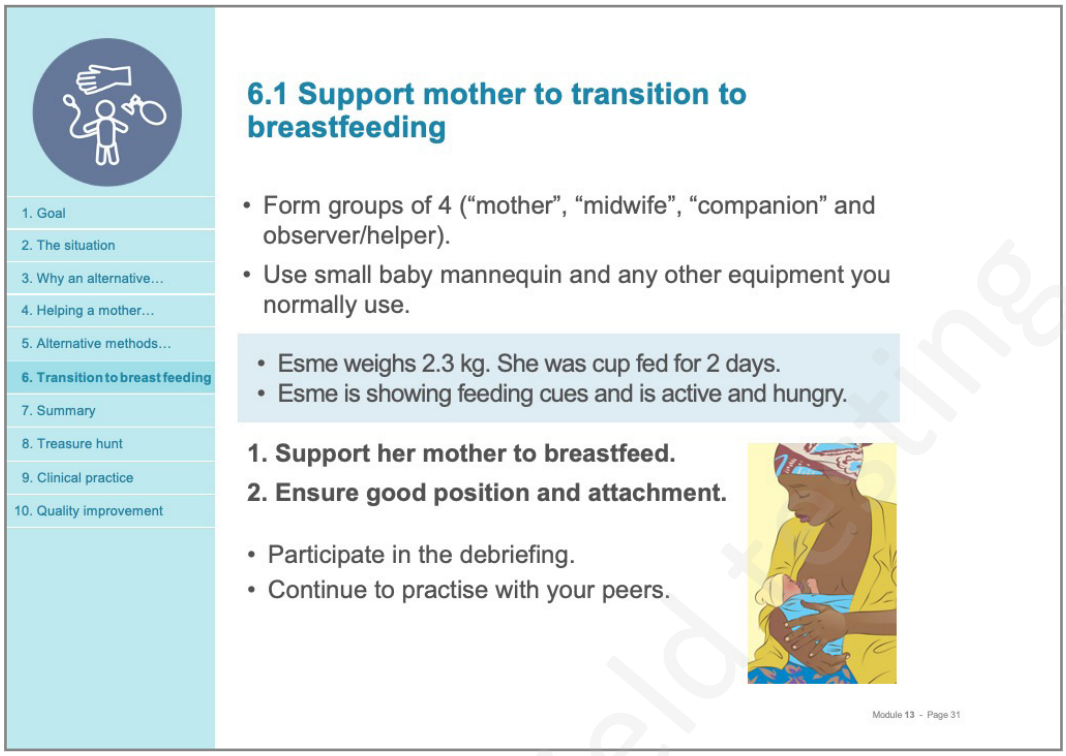
- **What is new knowledge for you?**
- **Are there any skills or practices that are different from your current practice?**
- **What provider's behaviours are different from your current practice?**
- **Does these videos highlight a quality gap in your setting?** If yes, update the POCQI form for alternative feeding.

Explain

- Remember
  - Breastfeeding at the breast is guided by the infant's competence and stability rather than a certain gestational/postnatal/postmenstrual age or weight.
  - It is important to recognize discrete signs of transition from deep to active sleep and waking up.
  - Guide mother not to interrupt the deep sleep stage just for routine feeding.
    - Encourage mother to observe her infant's signs of interest in rooting and sucking and breastfeed when her infant shows such signs.

Explain

- Routinely use a standardized, objective breastfeeding assessments, such as the Infant Breastfeeding Assessment Tool (IBFAT), Mother–Baby Assessment (MBA), LATCH or the UNICEF b-r-e-as-t tool (see references).



***Brief and debrief, following** Methodologies for facilitation.*

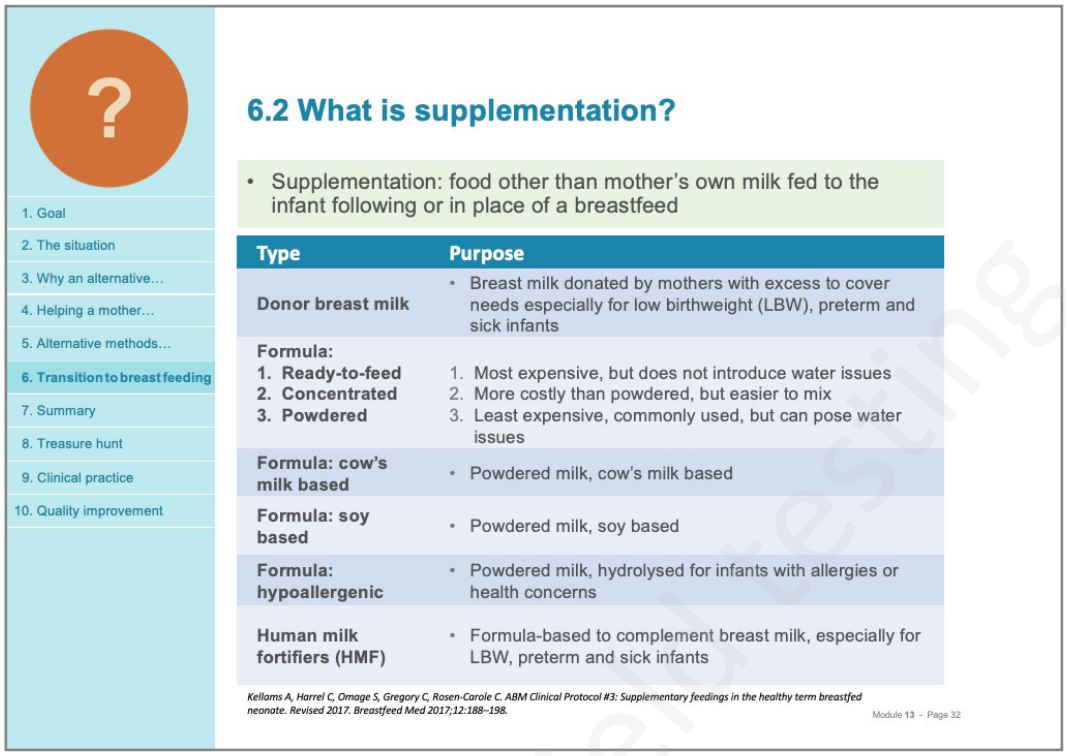
Brief
Read scenario

Skills and performance
Learners demonstrate:
1. *Supporting mother to breastfeed her small baby, communicating with her effectively and building her confidence.*
2. *Providing respectful care, with hands-off or hands-on hand technique as mother prefers or requests.*

Debrief
Address any issues relating to norms or behaviours now, in this safe environment.
Examples of concerns:
- *explains to mother that breastfeeding will be difficult because the baby has not reached a certain gestational/ postnatal/postmenstrual age or weight*
- *recommends scheduled feeds, with set duration*
- *advises "wait until the baby cries"*
- *swaddling/tight bundling of the baby*
- *ignores concerns or worries of mother or family members*
- *uses judgmental words ("good", "bad", "wrong", "normal")*
- *tells the mother instead of listening, reflecting, responding*
- *neglects to take time for the mother*
- *gives mother a handout and tells her to read it*
- *uses hands-on approach without first asking.*

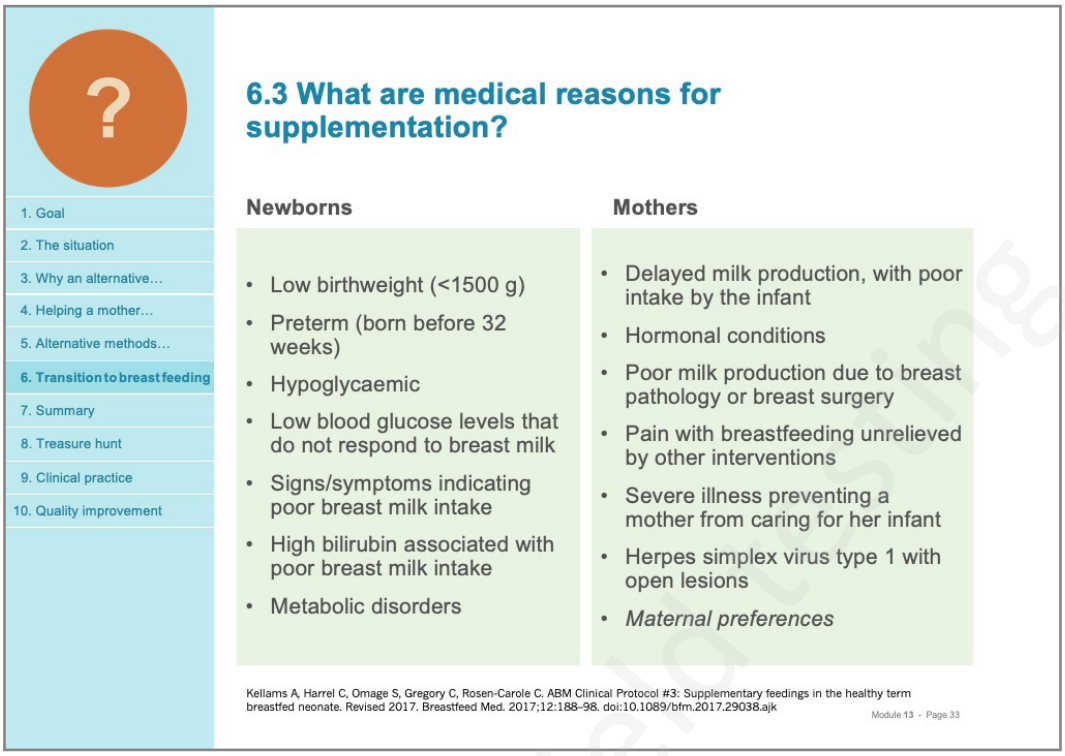
Demonstrate

Using mannequin and learner or a mother and newborn, emphasize steps omitted or where there was a problem.



Ask

- **What is supplementation?**
  - *Click through slide.*
  - *Ask for and answer questions.*



Ask

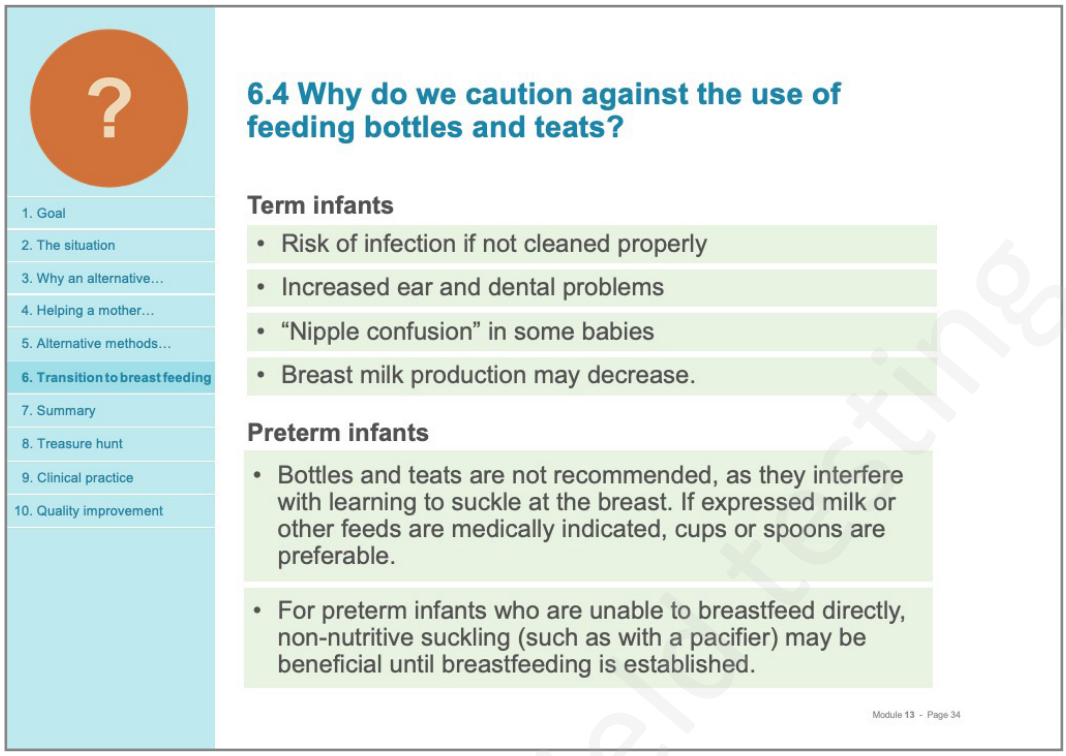
- **What medical reasons do you know for supplementation of breast milk feeding?**
  - *Show correct answers on slide.*
  - *Ask for and answer questions.*

Ask

- **What about maternal preferences?**

Explain

- Mothers who have made a fully informed decision not to breastfeed exclusively, or have chosen to mixed feed, may consider supplementary feeding with infant formula.
- It is important to ensure that:
  - All mothers are informed about the risks and management of various feeding options and have been helped to decide what is suitable in their circumstances.
  - All mothers have received factual information in a sensitive and respectful manner, including on the importance of exclusive breastfeeding, and on basic management of breastfeeding related to their concerns.

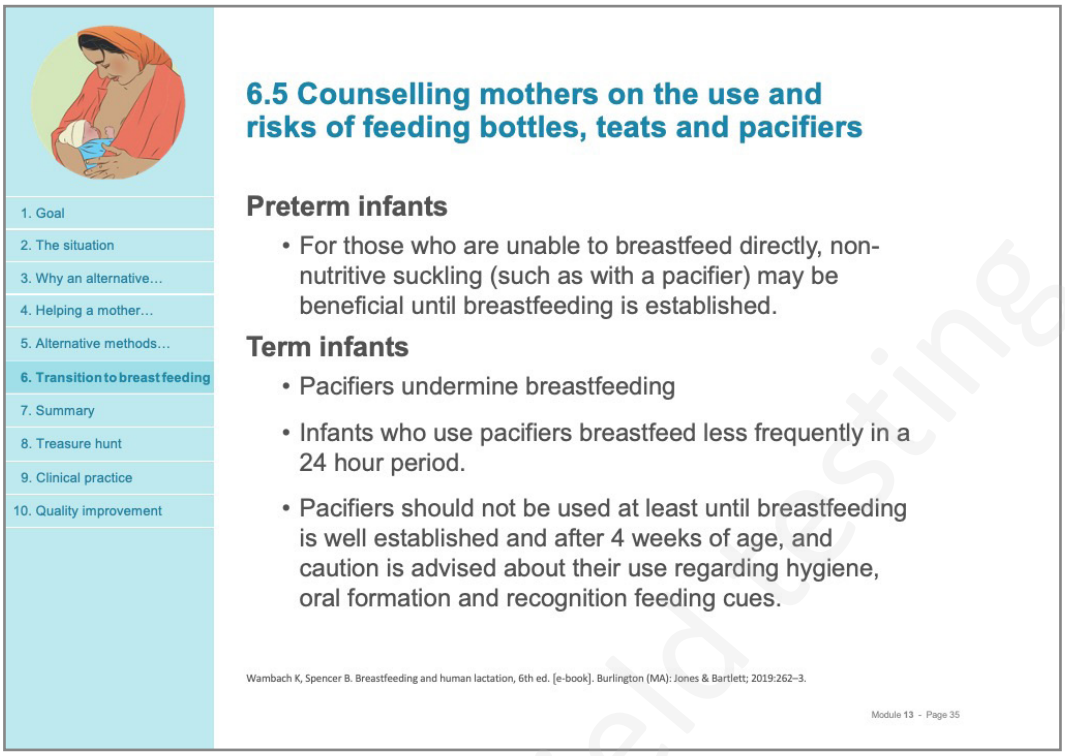


Ask

- **Why does the World Health Organisation caution against the use of feeding bottles and teats?**
  - *Click through slide.*
  - *Ask for and answer questions.*

Reference

Protecting, promoting and supporting breastfeeding: the baby-friendly hospital initiative for small, sick and preterm newborns. UNICEF & WHO, 2020.

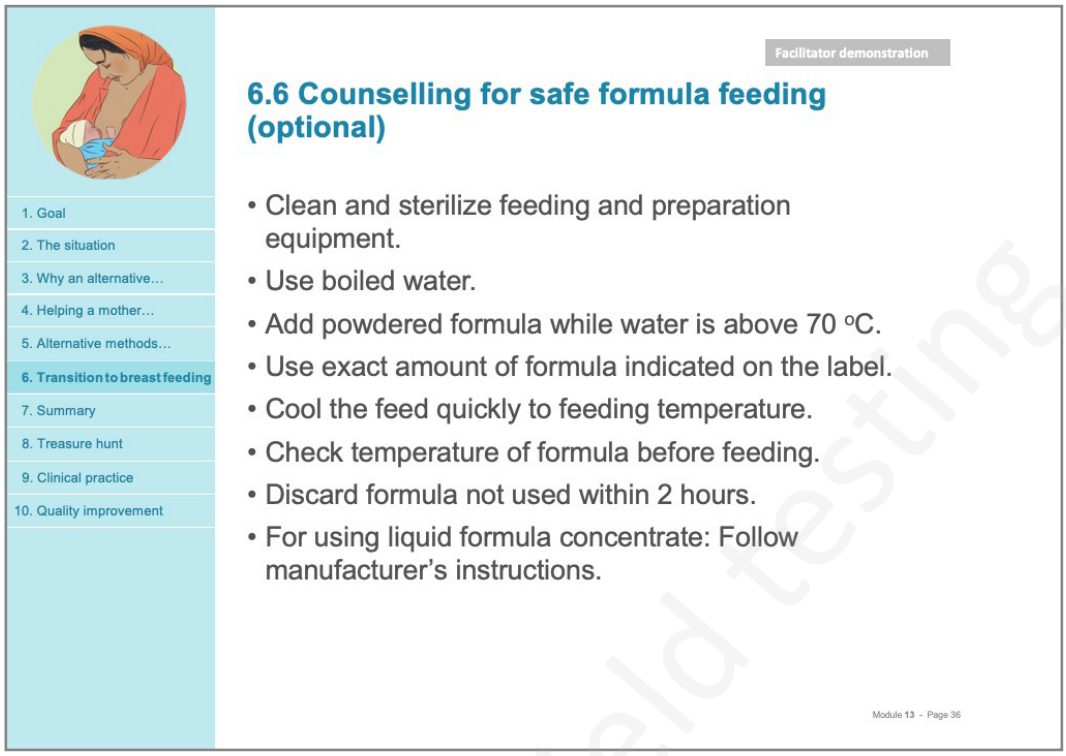


Ask

- **What guidance do you know on counselling mothers on use of feeding bottles, teats and pacifiers?**
- **What advice should be given for term and preterm newborns?**
  - *Click through answers on slide.*

Reference

Protecting, promoting and supporting breastfeeding: the baby-friendly hospital initiative for small, sick and preterm newborns. UNICEF & WHO, 2020. Pages 25–28.

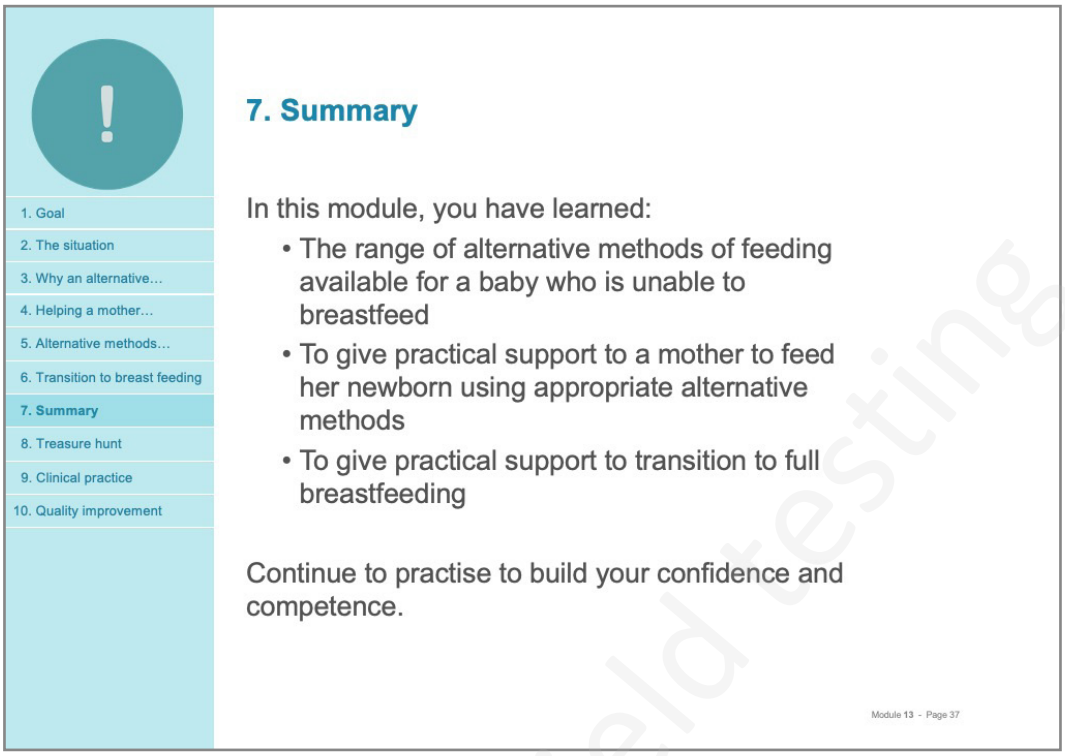


Optional

Demonstrate

Show how to perform each step safely.
Ask for and answer questions.

7. Summary



Explain

- Learners should continue practising their new skills with peers, using mannequins until confident. They can then practise with a clinical mentor or supervisor, supporting mothers and their babies in the clinical setting.
- Learners should review videos in their own time.
- This subject is covered in more depth in the WHO course Essential Care for Small and Sick Newborns, with clinical practice sessions and additional simulations.

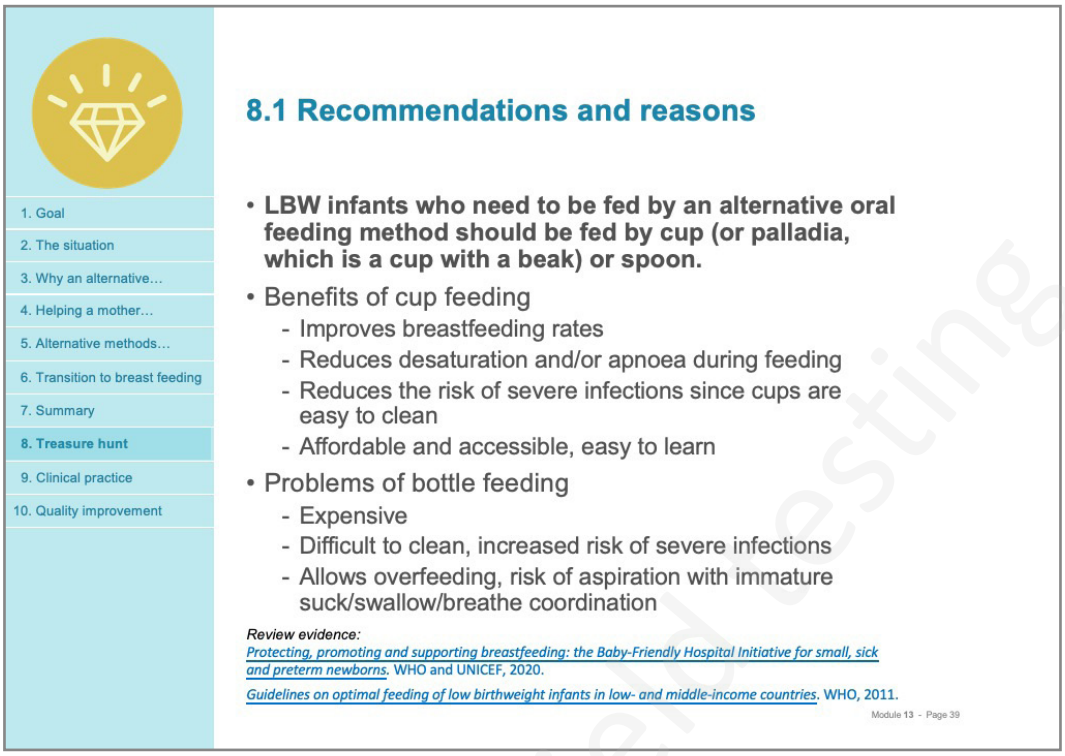
8. Treasure hunt

Learning objective: Learners find the evidence and apply the recommendations appropriately.

***Explain and organize, following** Methodologies for facilitation.*

Ask

- **Why do we recommend cup feeding instead of bottle-feeding?**



Ask finder to show and explain the recommendation and evidence.
Learners should apply the recommendations whenever caring for newborns.

Explain

- Low birthweight (LBW) infants, including those with very low birthweight (VLBW), should be fed their mother's own milk. Those LBW and VLBW infants who cannot be fed mother's own milk should be fed donor human milk.
- Cup feeding is easy to teach, use and keep clean, globally available and inexpensive unless choosing a commercial brand. The paladai (a small, beaked cup) is easy to teach, use and keep clean, readily available in certain countries at low to moderate expense.
- Pay attention to concerns such as spillage, slower feeds, lower intakes, different oromotor movements from breastfeeding and also the risk of aspiration if milk is poured into the infant's mouth when using a cup or paladai for feeding.
- Given that cup feeding is associated with benefits to breastfeeding rates, policy-makers and health care providers from resource-limited settings are likely to give high value to this feeding method.

Ask

- **Do you have any concerns about implementing this recommendation? Discuss.**
- **Does this recommendation highlight a quality gap in your setting?** If yes, update the POCQI form.

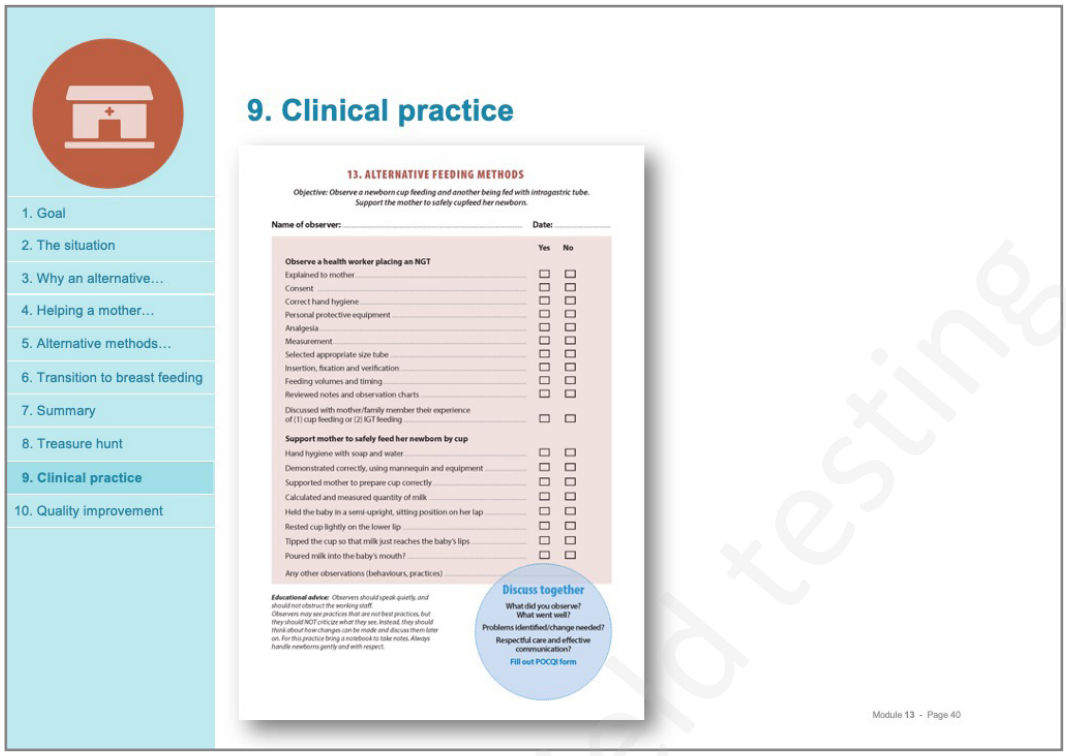
Review the evidence

Protecting, promoting and supporting breastfeeding: the baby-friendly hospital initiative for small, sick and preterm newborns. UNICEF & WHO, 2020.

Guidelines on optimal feeding of low birthweight infants in low-and middle-income countries. WHO, 2011.

Penny F, Judge M, Brownell E, McGrath JM. Cup feeding as a supplemental, alternative feeding method for preterm breastfed infants: an integrative review. Maternal Child Health J. 2018 Nov;22(11):1568–1579.

9. Clinical practice



Learning objective: Support a mother to safely cup feed her baby

Note: This clinical practice requires access to the neonatal unit.

Brief, organize, debrief, demonstrate and explain, following *Methodologies for facilitation.*

Brief
With facilitator or clinical mentor or via video link.

Skills and performance
Learners demonstrate:
1. *Observation of skills for cup feeding, NGT placement and feeding*
2. *Supporting a mother to safely cup feed her newborn.*

Debrief
Address any issues relating to norms, behaviours or practices now, in this safe environment.
Concerns could include:
- *For NGT feeding*
  - *no consent or explanation*
  - *poor infection prevention practices*
  - *no breast milk or sucrose given to baby*
  - *continues placing gastric tube when baby is coughing or desaturating.*
- *For cup feeding*
  - *poor attention to hygiene*
  - *baby lying down; pours milk into mouth*
  - *not baby-led; not responsive feeding.*

Optional
Demonstrate

Show step-by-step, using mannequin or a real baby, with parental consent, emphasizing where learners had difficulties.

10. Quality improvement

Learning objective: Learners reflect on gaps in quality of care and prioritize actions.

Quality improvement: alternative methods of feeding
Explain, review the POCQI template and organize discussion, following Methodologies for facilitation.

Optional
Show video

- ***A quality improvement initiative on breast feeding practices among mothers of infants admitted in NICU***

After clinical practice always facilitate discussion on observations made, possible reasons for practices and changes needed to improve the quality of essential newborn care. Focus on small, achievable steps.

For pre-service learners
- Document gaps or observed practices that need to change.
- Reflect on practical solutions.
- Discuss and prioritize one simple, achievable step.

For in-service learners
- If trained in POCQI, link to full Plan-Do-Study-Act cycle.
- If not trained in POCQI, document gaps, prioritize and discuss as above.

Ask

- **What quality gaps have you noted for safe alternative methods of feeding?**
- **What are your concerns?**
- **What are possible solutions and challenges?**
- **Choose one achievable action and prioritize its start.**
- **In your group of 4, review relevant standards/recommendations for safe alternative feeding, prioritize a problem to tackle first, make sure it is achievable, and then fill out the POCQI tool.**

Reference: *The full POCQI quality improvement template*

Further reading

- Ituntas N, Turkyilmaz C, Yildiz H, Kulali F, Hirfanoglu I, Onal E, et al. *Validity and reliability of the infant breastfeeding assessment tool, the mother baby assessment tool, and the LATCH scoring system.* Breastfeed Med. 2014;9(4):191–5. doi: 10.1089/bfm.2014.0018.

- Jensen D, Wallace S, Kelsay P. *LATCH: A breastfeeding charting system and documentation tool.* J Obstetr Gynecol Neonatal Nurs. 1994; 23:27–32. doi: 10.1111/j.1552-6909.1994.tb01847.x.

- Matthews MK. *Developing an instrument to assess infant breastfeeding behaviour in the early neonatal period.* Midwifery. 1988;4(4):154–65. doi: 10.1016/s0266-6138(88)80071-8.

- Mulford C. *The Mother–Baby Assessment (MBA): an "Apgar score" for breastfeeding*. J Hum Lact. 1992;8(2):79–82. doi: 10.1177/089033449200800216.

- *Supporting comprehensive cleft care through nutrition and feeding.* Smile Train, 2018.