LABORROOM MANUAL

Guidelines for labor room & protocols:

Instructions:

1. Do a rapid initial assessment to diagnose any condition which needs immediate attention e.g. - imminent delivery, ecclampsia, active bleeding per vagina, shock etc.
2. An initial assessment of weight and the basic investigations are ensured (e.g. Urine Examination & Hemoglobin)
3. Prior Enema is provided to the mother to ease the process of delivery
4. Always observe infection prevention practices while providing clinical care
5. Use Labor room footwear
6. Wear protective apron
7. Wash hands before and after patient examination following six steps
8. Wear sterile glove before examination
9. Discard glove in red bin after examination
10. Decontaminate all used instruments and send to CSSD
11. Clearance of waste basket during each duty shift along with swabbing of labor room floor.
12. Diagnose a patient in shock and manage according to protocol
13. Diagnose a patient in labor and manage according to protocol
14. Shift the patient in active phase: of labor and manage according to protocol

15. Manage second stage of labor and manage according to protocol using a partograph and never use misoprostol tablet oral/ vaginal without a record
16. Provide active management of 3rd stage of labor to all mothers according to protocol
17. Manage immediate post-partum period according to protocol
18. Diagnose and manage PPH and other third stage complication according to protocol
19. Diagnose and manage severe pre ecclampsia and ecclampsia according to protocol Follow therapeutic antibiotic protocol in sepsis cases according to protocol

2. Diagnosis of Labor:

Anticipate labor if the woman in third trimester of pregnancy has

- Painful intermittent uterine contraction with increasing frequency and intensity
- Show
- Watery vaginal discharge / sudden gush of water

Confirm onset of labor if there is

- Regular, painful uterine contractions of > 20 sec duration and at least once every 10 mins.
- Progressive cervical dilatation and effacement or
- Cervical dilatation of >= 4 cm

Stages and phases of labor:

- First Stage-

  Latent phase – cervix = 4 cm:4-6 hours

  Dilatation rate >= 1 cm/hour
- Second Stage- cervix -10 cm

If cervix is not dilated at initial examination and

- Pain persists – reexamine after 6 hours. If there is effacement and dilatation diagnose labor. If still no cervical change – diagnose false / pre-labor.
- Pain subsides – observe for 24 hours.

Obstetric care and management:

Careful monitoring of

- Progress of Labor
- Fetal wellbeing
- Maternal wellbeing

Careful monitoring will result in early identification of abnormality/complication &Timely intervention.

3. Care during latent phase:

Record

- Pulse: 2 hourly

- Respiration, temperature and B.P.: 4 hourly
- Uterine contraction: 1-2 hourly
- F.H.S.: hourly
- Descent: before each P/V examination
- Cervical dilatation and effacement, station of head and character of liquor (if membranes ruptured) at each P/V examination (6 hours after initial assessment).
- Protein and acetone in urine when passed.
- Intervention only for specific indication, e.g. Fetal distress.

4. Care during active phase:

Start plotting on partograph all events of labor once the woman is in active phase, The WHO partograph is modified by excluding the latent phase and beginning plotting at 4 cm cervical dilatation in active phase to make it simpler and easier to use. Record the following

- Patient information:

  Fill out name, Para, hospital number, date and time of admission, and time of rupture of membranes; or time elapsed since rupture of membranes (if rupture occurred before charting on the partograph began.

  Fetal heart rate: Record every half hour.
- Amniotic fluid: Record status of membrane & the Colour /nature of amniotic fluid at every vaginal examination:

" I: membranes intact

" C: membranes ruptured clear fluid

" M: meconium stained fluid

" B: blood stained fluid

" A: liquor absent

- Molding:
  - " 1+: Sutures apposed
  - " 2+: Sutures overlapped but reducible
  - " 3+: Sutures overlapped and not reducible
- Cervical dilatation: Assessed at every vaginal examination and marked with a cross (x). Begin plotting on partograph at 4 cm cervical dilatation. Expect 1 cm or more / hour dilatation thereafter.
- Alert line: A line starts at 4cm of cervical dilatation to the point of expected full dilation at the rate of 1 cm per hour. With normal progress, the cervicograph will remain on or to the left of the alert line.
- Action line: Parallel and four hours to the right of the alert line.
- Descent assessed by abdominal palpation: Recorded as a circle (O) at every abdominal examination. At 0/5 the sinciput is at the level of the symphysis pubis.
- Hours: Refers to the time elapsed since onset of active phase of labor (observed or extrapolated)

- Time: Record actual clock time.
- Contractions: Chart every half hour. Count the number of contractions in a 10 minutes time period, and their duration in seconds
    - Less than 20 seconds
    - Between 20 and 40 seconds
    - More than 40 seconds
- Oxytocin: Record the amount of oxytocin per volume IV fluids in drops per minute every 30 minutes when used.
- Drugs given: Record any additional drugs given.
- Pulse: Record every 30 minutes and mark with a dot (.)
- Blood pressure: Record every 2 hours and mark with arrows.
- Temperature: Record every 2 hours.
- Protein, acetone and volume: Record when urine is passed.

5. Management of second stage of labor:

Diagnosis of Second Stage:

- Urge to defecate.
- Urge to bear down.
- Membranes spontaneously rupture.
- Cervix is no longer palpable i.e. fully dilated.

Conduct of Delivery;

- Shift the patient to the delivery table, if such transfer is needed, when second stage is diagnosed
- Monitor FHR every five minutes.
- Put her on the position of her choice – preferably in dorsal or semi-recumbent position.
- Maintain cleanliness.
- Wash perineal area with an antiseptic solution and use sterile/clean drapes.
- When head is crowning the perineum, decide as to the need of episiotomy or otherwise (neither routinely required nor to be routinely avoided).
- If needed make a mediolateral episiotomy.
- When occiput hinges below symphysis pubis, apply gentle downward pressure to the occiput with left hand to prevent sudden extension while a pad in the other hand supports the perineum to enable controlled delivery of head rather than a sudden pop out.
- Once head is delivered, palpate fetal neck for any loop of cord. Slip it over the head if loose; if tight, cut it between two clamps.
- Clear the baby's mouth and oropharynx of mucous with a mucous sucker, if needed, before the body delivers. Deliver the shoulders by depressing the head posteriorly so that lateral flexion of the body occurs. The rest of the baby automatically follows.
- Cut the cord between clamps.

- Note birth time.
- Do essential and basic new born care.
- Give the baby to mother and let the baby start suckling if the baby is well (breathing/crying) and start resuscitation if unwell.
- Palpate the abdomen to rule out presence of additional baby.

IMMEDIATE CARE OF THE NEWBORN

- Soon after the delivery of the baby place it on the tray covered with dry linen with the head slightly downwards (15degree) .
- It facilitate drainage of the mucus accumulated in the tracheo - bronchial tree by gravity .
- Air passage should be cleared immediately of mucus and liquor by gentle suction
- a p g a r rating : 1 min and 5 min

PROVISION OF INITIAL CARE

- Maintain respiration and initiate lung expansion
  a) position- modified trendelenberg
  b) suction pm
- Supporting thermo regulation
  a) wrap infant blanket or place in radiant warmer
  b) skin to skin contact with mother to promote bonding
- Prophylaxis with neomycin and vit. 'k'

- Cord cutting and dressing and identifying the infant
- Taking anthropometric measurements and printing
- Giving the first bath

IMMEDIATE NEWBORN ASSESSMENT AND CARE (DELIVERY ROOM)

- Nursing assessment
- Maternal history/labor data indicating potential problems with newborn
- Apgar scores
- Findings of brief physical examination performed in the delivery room

NURSING DIAGNOSES

- Ineffective airway clearance related to nasal and oral secretions from delivery
- Ineffective thermoregulation related to environment and immature ability for adaptation
- Risk for injury related to immature defenses of the newborn

Plans and Interventions

- When the head is delivered birth attendant immediately suction secretions
- Wipe mucus from face and mouth and nose
- Aspirate/suction mouth and nose bulb syringe
- Keep head slightly lower than the body

1. **SUCTIONING IMMEDIATELY**

- ❖ Clean mucous from the face , mouth and nose . Aspiration with bulb syringe as per necessary .
- ❖ Neonatal resuscitator protocols no longer require suctioning on the perineum if meconium is present in the amniotic fluid .
- ❖ If meconium is present and baby is not vigorous suction the trachea before proceeding with other steps .

2. <u>ASSESSING RESPIRATORY STATUS</u>

a. Assess for 5 symptoms of respiratory distress

1. Retractions
2. Tachypnea (Rate: >60 Cpm)
3. Dusky Color/Circumoral Cyanosis
4. Expiratory Grunt
5. Flaring Naresb.

B. Do not hyperextend neck at anytime (may close glottis)

1. Place infant in "sniff" position
2. Neck slightly extended as if sniffing air opens airway

3. <u>PREVENT HEAT LOSS</u>

- ❖ Immediately dry infant under a radiant warmer or skin to skin contact with the mother
- ❖ Keep neonates head covered
- ❖ Infant temperature should be above 36.4°c.
- ❖ Infants lose heat through evaporation, radiation, conduction and convection

4. APGAR SCORE:

The Apgar scale is determined by evaluating the newborn baby on five simple criteria on a scale from zero to two, then summing up the five values thus obtained. The resulting Apgar score ranges from zero to 10.

The five criteria are summarized using words chosen to form a backronym (Appearance, Pulse, Grimace, Activity, Respiration).

The five criteria of the Apgar score:

	Score of 0	Score of 1	Score of 2	Component of backronym
Skin color	blue or pale all over	blue at extremities body pink (acrocyanosis)	no cyanosis body and extremities pink	Appearance
Pulse rate	absent	< 100 beats per minute	> 100 beats per minute	Pulse
Reflex irritability grimace	no response to stimulation	grimace on suction or aggressive stimulation	cry on stimulation	Grimace
Activity	none	some flexion	flexed arms and legs that resist	Activity

			extension	
Respiratory effort	absent	weak, irregular, gasping	strong, robust cry	Respiration

Interpretation of scores

- The test is generally done at one and five minutes after birth, and may be repeated later if the score is and remains low.
- Scores 7 and above are generally normal
- 4 to 6 fairly low
- 3 and below are generally regarded as critically low.

A low score on the one-minute test may show that the neonate requires medical attentionbut does not necessarily indicate a long-term problem, particularly if the score improves at the five-minute test. An Apgar score that remains below 3 at later times,such as 10, 15, or 30 minutes may indicate longer-termneurological damage, including a small but significant increase in the risk of cerebral palsy.

However, the Apgar test's purpose is to determine quickly whether a newborn needs immediate medical care. It is *not* designed to predict long term health issues

Neonatal Advanced Life Support (NALS): Neonatal Algorithm

Time: 0-30 seconds

1. Initial evaluation
   - Term gestation?
   - Breathing or crying?
   - Good muscle tone?

2. Routine care if initial evaluation findings are normal
   - Provide warmth
   - Clear airway if necessary
   - Dry newborn
   - Ongoing evaluation

3. Measures if initial evaluations findings are abnormal
   - Provide warmth
   - Clear airway if necessary
   - Dry, stimulate, and reposition

Time: 30-60 seconds

4. Secondary evaluation
   - Respirations
   - Heart rate
   - Color

5. If the heart rate is >100 bpm and the baby is pink with nonlabored breathing, proceed with routine care
6. If the heart rate is >100 bpm and the baby is cyanotic or has labored breathing, follow the steps below
   - Clear airway and begin monitoring pulse oximetry oxygen saturation (SpO_2)
   - Consider supplementary oxygen

- Consider continuous positive airway pressure (CPAP)
- If the baby improves, institute postresuscitation care

7. If the heart rate is < 100 bpm and the baby is gasping or apneic, follow the steps below

- Clear airway and begin SpO_2 monitoring
- Provide positive-pressure ventilation
- Consider supplementary oxygen
- If the baby improves, institute postresuscitation care

Time: 60-90 seconds

8. If the heart rate is < 60 bpm, follow the steps below

- Start chest compressions
- Consider intubation; intubate if no chest rise

9. Reassess heart rate

- If the heart rate is >60 bpm, stop compressions and continue ventilation
- If the heart rate is < 60 bpm, administer epinephrine and/or volume expansion

Drug therapy

See the list below:

- Epinephrine 0.01-0.03 mg/kg IV
- Crystalloid 10 mL/kg IV
- Naloxone is not recommended

Target preductal SpO2

See the list below:

- 1 minutes: 60%-65%
- 2 minutes: 65%-70%
- 3 minutes: 70%-75%
- 4 minutes: 75%-80%
- 5 minutes: 80%-85%
- 10 minutes: 85%-95%

Compressions

See the list below:

- Check pulse at brachial or femoral artery
- Compression landmarks: Lower half of sternum between the nipples
- Method: Thumb-encircling
- Depth: At least one-third anteroposterior chest diameter
- Allow complete chest recoil after each compression
- Compression rate: At least 100 compressions per minute
- Compression-to-ventilation ratio of 3:1
- Continuous compressions if advanced airway present
- Minimize interruptions in compressions to < 10 seconds

Airway

See the list below:

- Suction after birth is only for babies with obvious obstruction or who require positive pressure ventilation
- Suctioning during delivery has been shown to have no value
- Despite lack of evidence, continue current practice of endotracheal suctioning of nonvigorous babies with meconium-stained amniotic fluid

Ventilations

See the list below:

- Rate of 40-60 breaths per minute
- Watch for visible chest rise
- Administer positive end-expiratory pressure (PEEP), if available

Factors that should prompt consideration of intubation

See the list below:

- Nonvigorous meconium-stained newborn
- Ineffective bag-mask ventilation
- Cardiopulmonary resuscitation (CPR) is being performed
- Special circumstances such as extremely low birth weight or congenital diaphragmatic hernia

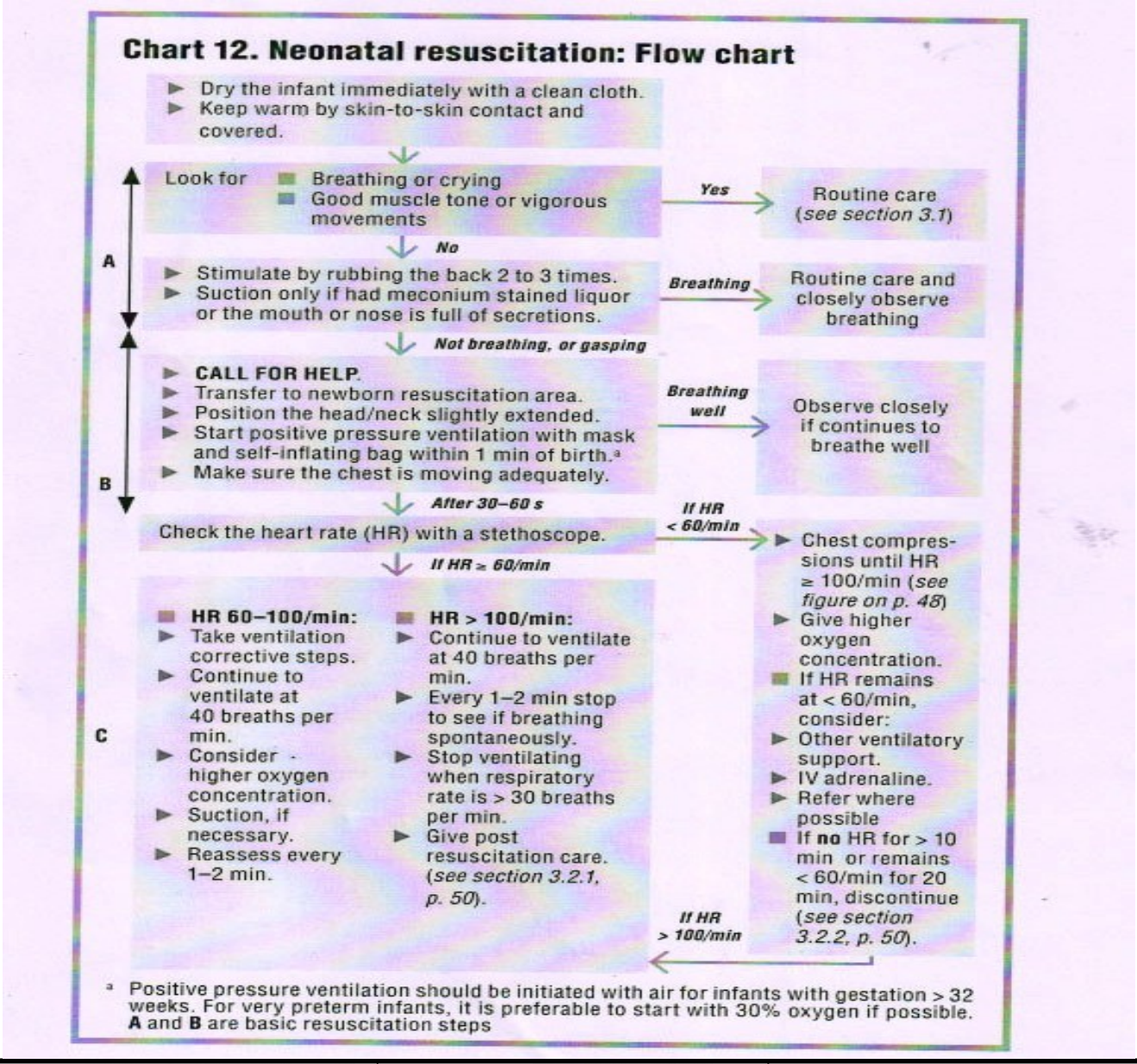

Chart 12. Neonatal resuscitation: Flow chart

- Dry the infant immediately with a clean cloth.
- Keep warm by skin-to-skin contact and covered.

A

Look for
- Breathing or crying
- Good muscle tone or vigorous movements

→ *Yes* → Routine care (*see section 3.1*)

No

- Stimulate by rubbing the back 2 to 3 times.
- Suction only if had meconium stained liquor or the mouth or nose is full of secretions.

→ *Breathing* → Routine care and closely observe breathing

Not breathing, or gasping

B

- **CALL FOR HELP.**
- Transfer to newborn resuscitation area.
- Position the head/neck slightly extended.
- Start positive pressure ventilation with mask and self-inflating bag within 1 min of birth.[a]
- Make sure the chest is moving adequately.

→ *Breathing well* → Observe closely if continues to breathe well

After 30–60 s

Check the heart rate (HR) with a stethoscope.

→ *If HR < 60/min* →
- Chest compressions until HR ≥ 100/min (*see figure on p. 48*)
- Give higher oxygen concentration.
- If HR remains at < 60/min, consider:
- Other ventilatory support.
- IV adrenaline.
- Refer where possible
- If **no** HR for > 10 min or remains < 60/min for 20 min, discontinue (*see section 3.2.2, p. 50*).

If HR ≥ 60/min

C

HR 60–100/min:
- Take ventilation corrective steps.
- Continue to ventilate at 40 breaths per min.
- Consider - higher oxygen concentration.
- Suction, if necessary.
- Reassess every 1–2 min.

HR > 100/min:
- Continue to ventilate at 40 breaths per min.
- Every 1–2 min stop to see if breathing spontaneously.
- Stop ventilating when respiratory rate is > 30 breaths per min.
- Give post resuscitation care. (*see section 3.2.1, p. 50*).

If HR > 100/min

[a] Positive pressure ventilation should be initiated with air for infants with gestation > 32 weeks. For very preterm infants, it is preferable to start with 30% oxygen if possible.
A and **B** are basic resuscitation steps

Chart 12. Neonatal resuscitation: Steps and process

There is no need to slap the infant; rubbing the back two or three times in addition to thorough drying is enough for stimulation.

A. Airway

- Keep the infant's head in a slightly extended position to open the airway.
- Do not suction routinely. Suction the airway if there is meconium-stained fluid **and** the infant is **not** crying and moving limbs. When the amniotic fluid is clear, suction only if the nose or mouth is full of secretions.
  - Suck the mouth, nose and oropharynx by direct vision; do not suck right down the throat, as this can cause apnoea or bradycardia.

B. Breathing

- Choose a mask size that fits over the nose and mouth (see below): size 1 for normal-weight infant, size 0 for small (< 2.5 kg) infants
- Ventilate with bag and mask at 40–60 breaths/min.
- Make sure the chest moves up with each press on the bag; in a very small infant, make sure the chest does not move too much (danger of causing pneumothorax).

C. Circulation

- Give chest compressions if the heart rate is < 60/min after 30–60 s of ventilation with adequate chest movements: 90 compressions coordinated with 30 breaths/min (three compressions: one breath every 2 s).
- Place thumbs just below the line connecting the nipples on the sternum (see below).
- Compress one third the anterior–posterior diameter of the chest.

Correct head position to open up airway and for bag ventilation. Do not hyperextend the neck.

Correct position of hands for cardiac massage of a neonate. The thumbs are used for compression over the sternum.

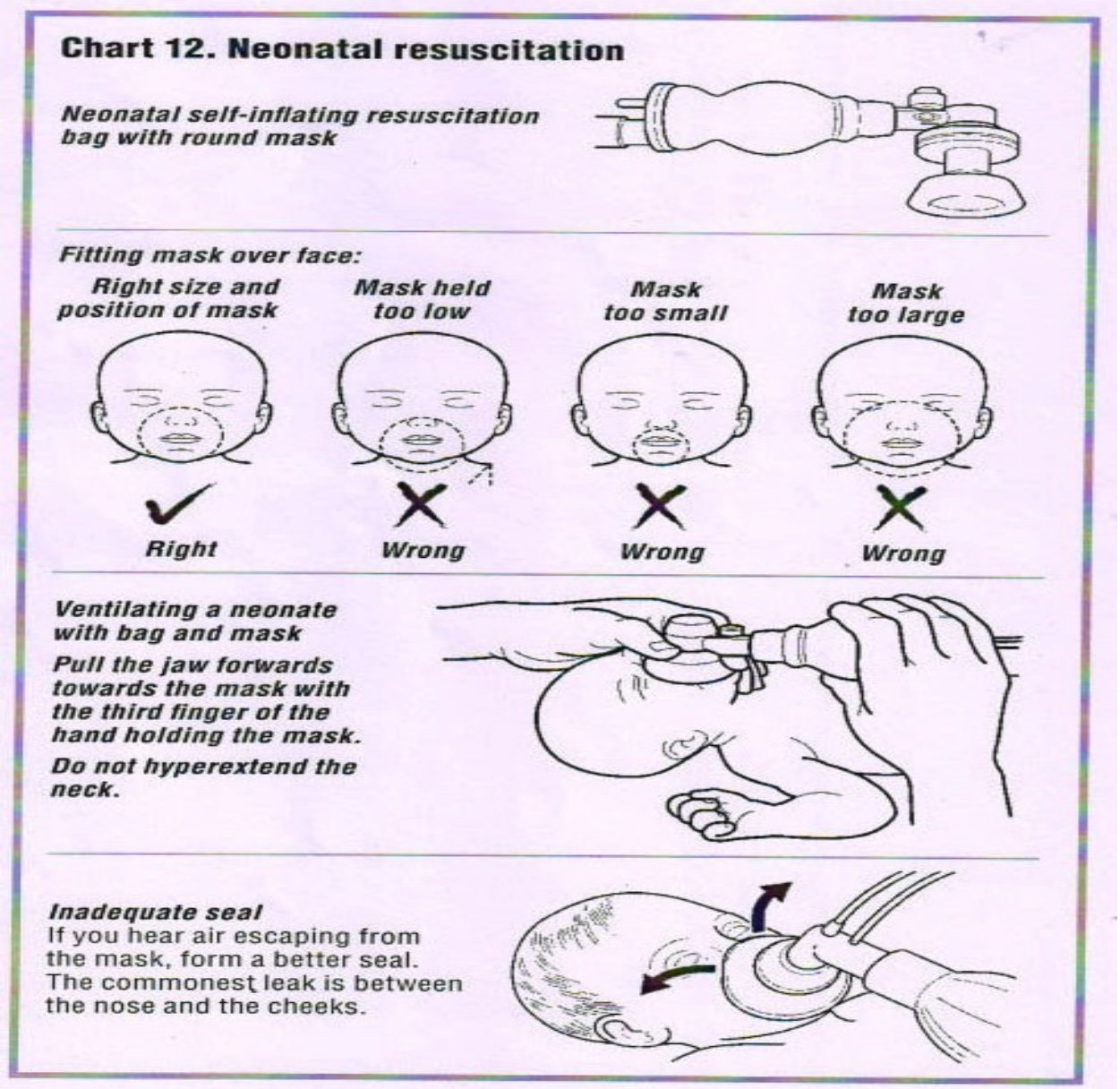
Chart 12. Neonatal resuscitation
Neonatal self-inflating resuscitation bag with round mask
Fitting mask over face:
Right size and position of mask
Mask held too low
Mask too small
Mask too large
Right
Wrong
Wrong
Wrong
Ventilating a neonate with bag and mask
Pull the jaw forwards towards the mask with the third finger of the hand holding the mask.
Do not hyperextend the neck.
Inadequate seal
If you hear air escaping from the mask, form a better seal. The commonest leak is between the nose and the cheeks.

CLAMPING AND LIGATURE OF THE CORD

- the near one is placed 5 cm away from the umbilicus and is cut in between .
- two separate cord ligature is applied with sterile cotton treads 1 cm apart using reef knot , the proximal being placed 2.5 cm away from the naval . squeezing the cord with fingers prior to applying ligature . leaving behind a length of cord attached to the naval not only prevents inclusion of the embryonic structures , if present , but also facilitate control of primary haemorrhage due to slipped ligature .the cord is divided with scissor 1 cm beyond the ligature taking aseptic precautions so as to prevent cord sepsis**.**
- clamp the cord with two kocher's forceps . the cut end is then covered with sterile guaze piece after making sure that there is no bleeding.
- purpose of clamping of cord on maternal end is to preventing soiling of bed with blood and to prevent fetal blood loss of second baby in undiagnosed monozygotic twin .
- delay in clamping for 2-3 min or till cessation of the cord pulsation facilitates transfer of 80-100 ml blood from compressed placenta to baby when placed below the level of uterus .
- quick check is made to detect any abnormality and the baby is wrapped with dry warm towel . the identification tag is tied to both mother and baby on the wrist .
- baby when placed below level of the uterus . its beneficial for mature baby but can be deleterious to a pre-term baby due to hypervolaemia .
- **T**he umbilical stump needs particular attention as there are risks of bleeding and infection.

Good cord care includes:

- ❖ cutting cord with sterile equipment or a new razor blade depending on the setting
- ❖ ligation with a sterile plastic clamp or clean thread
- ❖ keeping cord stump exposed, clean (with 70% alcohol, 4% chlorhexidine or simple soap and water) and dry

CORD CARE

examine cord for presence of 3 vessels and document 2 arteries and 1 vein

CORD BLOOD COLLECTION

Make sure cord blood is collected for analysis and sent to laboratory for checking:

- ◦ Rh
- ◦ Blood type
- ◦ Hematocrit
- ◦ Possible cord blood gases

FOOT PRINTING

- ❖ footprints are taken and recorded in the medical recor

6. Active Management of third stage of labor

- Inj. Oxytocin 10 units IM after delivery of foetus (within 1 min).

- Look for placental separation. Place the left hand on lower abdomen to detect the contraction of uterus. (After delivery, uterus is at or just below the level of umbilicus. It also ensures early detection of blood collecting inside the uterus.)

Signs of placental separation:

Uterus becomes contracted, hard and globular,

- Uterus just above umbilicus;
- Extra Vulvar lengthening of umbilical cord;
- A gush of blood frequently appears;
- On pushing the uterus up in the abdomen, the cord does not recede back.
- Deliver placenta (after its separation) by controlled
- Cord traction while raising the uterus gently upward by abdominal hand.
- Massage the uterus (after delivery of placenta) to keep it contracted.
- Inspect the placenta & membranes for completeness.
- Inspect vagina and perineum for any tears.
- Repair tears / episiotomy if any.

Note: Oxytocic's for third stage management:

- Oxytocin – first choice (but never give IV bolus)
- Misoprostol – has a promise
- Prostaglandin – effective but costly
- Ergometrine/Methyl Ergometrine – has contraindications & side effects

- Use other oxytocic if oxytocin is not available.
- Exclude contraindications if using methyl Ergometrine& remain cautious about side effects

7. Immediate postpartum care

Closely monitor for first 6 hours.

- Pulse, respiration, temperature, B.P., G.C
- Vaginal bleeding.
- Uterine hardness.

@ Every 15 mins, for 2 hours.

@ Every 30 mins. For 2 hours.

@ Every hour for 2 hours.

- Massage the uterus every 15 mins to maintain contraction
- If stable (and there is no contraindication) give her something to drink when she feels thirsty and something to eat when she is hungry.
- Keep the baby in skin contact with mother.
- Initiate exclusive breast feeding within 1 hour
- Observe the mother and monitor daily for foul smelling discolored (lochia) discharge per vagina during the post-partum period

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