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A GUIDE FOR MIDWIFERY SKILLS

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INTRODUCTION

The *Guide for Midwifery Skills* has been developed in order to outline and explain a number of essential midwifery skills and procedures. These can be recognised as established components of the perinatal care provided by all midwives. The intention of this guide is not prescriptive, on the contrary, it seeks to emphasise that midwifery care derives its strength from the autonomy and professionalism of each midwife and her own practice. Nonetheless it is essential to ensure that midwifery care is informed by the evidence-base and reflects the expected standards of quality of care.

In tandem with the information outlined in this guide, it is also important to note that the central scope of midwifery care is to practise in partnership with the woman, and her partner. Hence one of the primary principles in all aspects of care must be that of up-to-date, complete and appropriate information-giving and informed consent.

ANTENATAL EXAMINATION

Scope:

Pregnancy is a normal physiological process yet regular antenatal assessment by a midwife, general practitioner or obstetrician is a crucial process of care that women should ideally follow. A planned system of antenatal care in pregnancy can modify and/or reinforce a healthy lifestyle for the pregnant woman and her developing fetus whilst performing recognized assessment and examination to detect any deviations from the norm.

Assessment and examination:

1. Introduce oneself to the woman and to her partner, if present. Explain the procedure to the woman and gain her consent.
2. Prior to undertaking the examination, ask the woman if she needs to empty her bladder.
3. Read her notes so as to identify any issues requiring special attention and to evaluate any previous care/advice. Note if the results of any screening tests or investigations have been issued. If so, review, record and discuss these with the woman.
4. Maintain dignity and ensure privacy, giving her the opportunity to disclose any personal information.
5. Gather the necessary equipment.
6. Wash hands, to reduce the risk of cross-infection.
7. Sit at eye level with her and ask her how she is feeling, sleeping and eating. Encourage a healthy lifestyle and exercise routine. Consider and assess any social factors which may affect the wellbeing of the woman and the baby.
8. Ask her if she is taking any supplements. Remind women that, up to 12 weeks, 400mcg of folic acid supplementation is recommended daily. Vitamin D supplementation (10mcg daily) may also be appropriate for women who are housebound/remain covered when outdoors, are of South Asian, African, Caribbean or Middle Eastern family origin, who consume no oily fish, eggs, meat, vitamin D-fortified margarine or breakfast cereal and women with a pre-pregnancy body mass index above 30 kg/m^2.

9. Observe her physical appearance and record her parameters, most importantly her blood pressure and pulse.
10. Ask her how her breasts feel. Give appropriate information regarding the normal breast changes in pregnancy. Encourage the woman to breastfeed. Offer advice and answer any questions that the woman might have.
11. One may also take the opportunity to remind the woman of the importance of the self-breast examination as a means for earlier detection of breast cancer.

Note: Self-breast examination

The woman should stand in front of a mirror with the torso exposed and should look for visual signs of dimpling, swelling, distortions or redness on or near the breasts. This should be repeated in several positions, such as while having hands on the hips, and then again with arms held overhead.

The breasts should then be palpated with the pads of her fingers to feel for lumps or soreness. A common pattern designed to ensure complete coverage is the circular pattern, which involves moving the fingers in concentric circles from the nipple outward.

The palpation process should cover the entire breast, including the 'axillary tail' of each breast that extends toward the axilla.

The palpation process is usually done once while standing in front of a mirror and again while lying down.

The self-exam should ideally be performed at the same stage of the woman's menstrual cycle, because the normal hormone fluctuations can cause changes in the breasts. The most commonly recommended time is just after the end of menstruation, because the breasts are least likely to be swollen and tender at this time.

12. Ask her about fetal movement.
13. Next, gently examine the woman's abdomen, (refer to Abdominal Examination).
14. Ask the woman if she's passing urine regularly and encourage pelvic floor exercises.
15. Inform her regarding normal and abnormal discharge per vaginam and give advice on perineal hygiene.

16. Question her bowel habits. If she has haemorrhoids, give advice on how to manage them and offer dietary advice.
17. Observe legs. Assess leg comfort, veins and oedema if any, and encourage leg exercises to help prevent deep vein thrombosis. Advise her on what to do if she has pain in her calves. To assess for pitting oedema, press over a bony prominence for 5-15 seconds.
18. Obtain a mid-stream specimen of urine from the woman for dipstick urinalysis.
19. Ask the woman if she has any concerns or questions.
20. Any leaflets with evidence-based information may also be given. Information appropriate to the woman's gestation should be provided periodically at each antenatal check-up, in addition to childbirth education classes.
21. Wash hands to minimize the risk of cross-infection
22. Communicate findings with the woman.
23. Complete documentation and act accordingly.

Follow-up:

Explain any necessary follow-up care/referrals to the woman. Recommend when a subsequent antenatal examination and check-up is advisable.

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ANTENATAL ABDOMINAL ASSESSMENT

Aim:

The aim of an antenatal abdominal examination is to assess fundal height, fetal growth, fetal lie, position and presentation. The fetal heart should be auscultated and fetal movements noted during the examination or as felt by the woman. It is also intended to detect deviations from the norm.

Assessment and Examination:

1. Explain the procedure to the woman and gain informed consent.
2. Encourage the woman to empty her bladder so as to avoid discomfort during the procedure and distortion of fundal height.
3. Ensure privacy.
4. Ask the woman to adopt a semi-recumbent position to avoid vena-caval compression due to the weight of the gravid uterus.
5. Perform hand hygiene and gather all the equipment required.

Inspection

6. Observe the size, shape, fetal movements and any skin changes of the abdomen.

Such observations may give an indication of the fetal size, lie, position, presentation and gestational period, along with any history of abdominal surgery.

Palpation

Fundal palpation

7. Assess the estimated gestational period by measuring the fundal height. One can use a traditional set of indicators that consider landmarks on the abdomen. More accurately, from 24 weeks onwards, the symphysis-fundal height can be calculated using a tape measure (graduated side downwards) to measure the centimeters from the upper border of the symphysis pubis to the top of the fundus.

8. Gently place both hands around the fundus, and using the palmar surfaces of both hands, determine the contours of the fetus.

This provides an indication of the lie and presentation of the fetus according to the contents of the upper pole of the uterus. The head feels hard, round, and is ballotable whilst the buttocks feel softer, less ballotable and bulky.

Lateral palpation

This identifies the fetal position and confirms the lie by assessing the main body of the uterus. It also gives information about fetal size, amniotic fluid volume, uterine tone and fetal movements.

9. Place hands on either side of the uterus and, with one side supported, palpate the other side down the length of the uterus, using the pads of the fingers.
10. Palpate the other side of the uterus in the same way.

The spine is usually firm and smooth whilst the limbs are less clearly defined, with that side of the uterus being softer.

Pelvic palpation

11. To confirm the presentation and assess engagement, face the woman's feet and use both hands, one on either side of the lower pole of the uterus, to press in gently using finger pads, not tips.
12. Encourage breathing exercises.
13. Feel the presentation beneath the hands.

Alternatively, Pawlik's grip may be considered, which involves the use of only one hand to grasp the presenting part. However, this is uncomfortable for the woman and should therefore be done gently.

Auscultation

This step is primarily done as reassurance for the mother, but may also be a good predictor of fetal wellbeing. The clearest fetal heart sounds are heard over the fetal shoulder.

14. Place the equipment on the woman's abdomen, the location depending on the fetal presentation and position.
15. Assess the fetal heart for its presence, rate (110-160bpm), regularity and variability.
16. Palpate the maternal radial pulse simultaneously whilst listening to the fetal heart to ensure that the fetal heart is being heard.
17. Assist the woman into a comfortable position.

Follow-up:

18. Discuss the findings with the woman.
19. Document the findings and act accordingly.
20. Note when follow-up is required and ensure the woman has the necessary appointments/referrals.

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ELECTRONIC FETAL MONITORING/CARDIOTOCOGRAPHY

Aim:

This guide is intended to list the indications for the use of electronic fetal monitoring and to describe the procedure and management of electronic fetal monitoring.

Background

Electronic fetal monitoring was introduced with the aim of improving fetal surveillance, in particular during the intrapartum process. However, no significant differences/improvements have been demonstrated towards the reduction of perinatal mortality or cerebral palsy, aside from a decline in transient neonatal seizures (Alfirevic, Devane, & Gyte, 2009; NICE, 2007). Inadvertently, the use of continuous electronic fetal monitoring has resulted in an increase in maternal intervention rates including operative deliveries and Caesarean sections (Alfirevic, Devane, & Gyte, 2009; NICE, 2007). Therefore, continuous electronic fetal monitoring should be offered and recommended solely for high-risk pregnancies, where there is an increased risk for fetal compromise and hence perinatal death, cerebral palsy or neonatal encephalopathy. The following is a list of indications when electronic fetal monitoring should be continuous.

Assessment:

Indications for continuous electronic fetal monitoring, including maternal medical problems, antepartum risk factors and intrapartum complications:

Antepartum Maternal and Fetal Indications:

- Hypertension/Pre-eclampsia
- Diabetes
- Cardiac diseases
- Neurological disease
- Haemoglobinopathy
- Severe anaemia
- Hyperthyroidism
- Renal disease

- Multiple pregnancies
- Intrauterine growth restriction
- Preterm labour
- Breech presentation
- Oligohydramnios
- Rhesus Iso-immunisation
- Abnormal Doppler studies
- Post-term pregnancy >42 weeks
- Antepartum haemorrhage

Intrapartum Maternal and Fetal Indications:

- Vaginal bleeding in labour
- Intrauterine infection
- Maternal pyrexia (>37.5^{o}C)
- Induced or augmented labour
- Prolonged rupture of membranes (>24 hours)
- Prolonged labour
- Regional anaesthesia
- Meconium-stained liquor
- Suspicious fetal heart tracings in intermittent auscultation (tachycardia, bradycardia, decelerations)
- Abnormal uterine activity
- Previous caesarean section

Management:

1. Introduce yourself and explain to the woman what a CTG monitor is and why it is indicated in her case.
2. Gain and record informed consent
3. Invite the woman to empty her bladder
4. Check maternal vital signs: blood pressure, temperature and pulse
5. Position the woman in a comfortable position e.g. sitting or semi-recumbent

6. Perform an abdominal examination and auscultate the fetal heart using a Pinard stethoscope
7. Secure two belts around the woman's abdomen, ensuring that the woman is sufficiently covered all the time
8. Apply gel on the ultrasound transducer. If during labour electronic fetal monitoring is required to be continuous, it would be beneficial for the woman to make use of the wireless telemetry since it enables her to be mobile.
9. Place the ultrasound transducer over the area where heart sounds are expected to be heard and secure it using a belt; the signal should indicate that the positioning is good.
10. Assess the maternal pulse to ensure that the two are different.
11. Place the tocodynamometer on the uterine fundus securing it with another belt.
12. Adjust the toco setting on the machine (when the uterus is relaxed) to 0mmHg.
13. Input the woman's personal data (name and surname; ID card number; date and time commenced; gestational age; and indication for monitoring, in the machine's system and start the paper printing (1cm per minute).
14. Input also all other events such as commencement of augmentation and use of analgesia on the trace, sign and print the page.
15. Ensure that any automatic printing of data (e.g. date and time) is correct.
16. Encourage the woman to record any fetal movements if indicated.
17. Record the indication and commencement of monitoring in the records with date, time and signature.
18. Review the tracing and document your findings (the Dr C BRAVADO mnemonic may be used). Ensure that anyone else who reviews the trace should sign with date, time and findings both on the trace or in the records.
19. Remove the monitor when the tracing is within the normal limits and no further monitoring is required.
20. Wipe the gel off the abdomen.
21. Discuss the results with the woman.
22. Sign and store the tracing correctly, record completion of the monitoring and relevant follow-up indications for care.
23. If birth has occurred, the date, time and mode of delivery should also be recorded on the tracing.

24. Clean, restock and store equipment correctly.

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CARDIOTOCOGRAPHY INTERPRETATION

Aim:

- To outline the terminology for cardiotocography, including definitions and interpretation of fetal heart rate tracings
- To discuss the mnemonic DR C BRAVADO to develop an overall assessment and general management plan
- To outline the role of the midwife in cardiotocographic interpretation

Background

When performing electronic fetal monitoring, accurate interpretation of the cardiotocograph is crucial in order to be able to offer the best management plan without unnecessary interventions. The mnemonic DR C BRAVADO is a systematic approach to the interpretation of fetal heart rate tracings. The mnemonic DR C BRAVADO stands for:

- **D**etermine **R**isk
- **C**ontractions
- **B**aseline **Ra**te
- **V**ariability
- **A**ccelerations
- **D**ecelerations
- **O**verall Assessment

Assessment:

a. **Baseline Rate** – is the rate to which the fetal heart returns after an acceleration or deceleration. A normal baseline rate should be between 110 and 160bpm. The rate is determined over a period of 5-10 minutes (in between contractions if in labour).

b. **Baseline Variability** – the mean fetal heart rate rounded to increments of 5bpm during a 10 minute period. Variability may be reduced if the baby is sleeping (usually showing as 40 minute periods). Reduced variability for periods longer than 40 minutes should be investigated as these become suspicious. Variability can be characterized as:

   i. **Absent variability** – amplitude range is undetectable
   ii. **Minimal variability** – amplitude range detectable but ≤ 5bpm
   iii. **Moderate variability** – amplitude range is 6-25bpm

iv. **Marked variability** – amplitude range is > 25bpm

c. **Baseline Bradycardia** – is a baseline rate which is less than 110bpm.

d. **Baseline Tachycardia** – is a baseline rate of more than 160bpm.

e. **Accelerations** – are visually apparent, abrupt increase in the fetal heart rate above the most recent baseline with an onset to peak in <30seconds. The peak of the acceleration is ≥15bpm lasting for ≥15seconds. When the acceleration lasts more than 2 minutes but less than 10 minutes it is said to be a prolonged acceleration.

f. **Decelerations** – are defined by timing related to uterine contractions. Decelerations are defined as recurrent if they occur with ≥50 per cent of contractions in a 20 minute period. However, if decelerations occur with <50 per cent of contractions in a 20 minute window, they are defined as intermittent. Decelerations can be classified as:

   i. **Early** – a gradual decrease in fetal heart rate with return to baseline in association with a uterine contraction. Early decelerations are often associated with head compression during the second stage of labour, with the peak of the contraction mirroring the nadir of the deceleration.

   ii. **Variable** – abrupt decrease in fetal heart rate below the baseline with nadir ≤ 30 seconds. The decrease in fetal heart is ≥ 15bpm with duration of ≥ 15 seconds but < 2 minutes and may not be associated with contractions. Variable decelerations are most often the result of cord compression. 'Shouldering' occurs when the fetal heart accelerates before and after the deceleration before returning to the baseline.

   iii. **Late** – gradual decreases in fetal heart rate, occurring after the onset of contractions and recovery taking place after the end of the contraction. These are often a result of reduced uteroplacental blood flow.

   iv. **Prolonged** – occurring at any time, with an apparent decrease in fetal heart rate baseline ≥ 15bpm, lasting ≥ 2 minutes but < 10 minutes.

A CTG trace can be categorized in 3 classifications:

g. **Normal tracing** – normal tracings are strongly predictive of normal fetal pH at the time of observation. These must include the following criteria:

i. baseline of 110-160bpm
ii. moderate baseline variability
iii. late or variable decelerations are absent
iv. early decelerations may be present or absent
v. accelerations may be present or absent

h. **Suspicious/Indeterminate tracing** – indeterminate tracings which can be classified as neither normal nor pathological but are suspicious and need closer observation. Any of the following may be present for a tracing to be classified as indeterminate/non-reassuring:
    i. tachycardia
    ii. baseline with absent, minimal, or marked variability
    iii. recurrent variable decelerations with minimal to moderate variability
    iv. recurrent late decelerations with moderate variable
    v. variable decelerations with slow return, overshoot or 'shoulders'
    vi. prolonged decelerations
    vii. no accelerations after fetal stimulation

i. **Pathological/Abnormal tracing** – these tracings are predictive of abnormal fetal pH status and require immediate intervention. Such tracings may include:
    i. sinusoidal pattern

    OR

    i. absent fetal heart rate variability with any of the following:
        - recurrent late decelerations
        - recurrent variable decelerations
        - bradycardia

Follow-up:

The midwife is accountable and responsible for analysing and interpreting the trace in order to assess and ascertain fetal wellbeing. Should the midwife suspect that the fetus is showing signs of fetal compromise, she ought to refer for obstetric review and consultation for further management. In addition, once the midwife detects any deviation from the normal tracing, she may take the following actions to promote resolution of fetal compromise and/or attain better assessment of fetal wellbeing:

i. assess cervix for dilatation and exclude the possibility of cord prolapse
ii. assess maternal vital signs
iii. change maternal position, provide free-flow oxygen and set-up IV fluids
iv. stop Oxytocin infusion
v. change the method of fetal monitoring (e.g. placing a fetal scalp electrode)
vi. consider the use of fetal blood sampling
vii. consider the need for immediate delivery

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ASSESSING UTERINE CONTRACTIONS

Scope:

Uterine contractions are a significant parameter in the assessment of a gravid woman. In labour it is important to note and assess the strength, frequency and duration of contractions. Such an assessment can be attained by obtaining a history and description from the woman, by using an electronic tocodynamometer (see Electronic Fetal Monitoring/Cardiotocography) and/or by manual palpation. Assessment by manual palpation tends to be subjective, depending on the individual who is performing the assessment. Nonetheless, it can provide a necessary assessment of the baseline tone of the contractions. Hence, together with the woman's own assessment of her contractions, the midwife can put together a sound understanding of the pattern and intensity of the contractions.

Procedure:

1. Gain informed consent
2. Wash and warm hands
3. Ensure that the woman is in a comfortable position and gain access to the fundal area whilst maintaining the woman's privacy
4. Place one hand on the fundal area
5. Keeping the hand still, feel for the contraction along the length of the fingers
6. Observe the length of time from when the contraction starts till it lasts and the extent to which the uterus hardens
7. Observe the time in between contractions to assess the frequency
8. If the contractions are irregular, palpate the contractions for 10 minutes to calculate the number occurring in a 10 minute period. You can also opt to ask the woman to note the number of contractions in 10 minutes provided that she is feeling them. This is less intrusive.
9. Discuss the findings with the woman
10. Document the findings (contraction strength, frequency and duration) and act accordingly

Follow-up:

The midwife should document her findings and repeat assessment of uterine contractions every half an hour in the first stage of labour or as often as indicated.

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EXAMINATION PER VAGINAM [VE]

Aim:

The examination per vaginam or vaginal examination [VE] is a systematic digital internal examination which provides valuable information during the antenatal, but more significantly the intrapartum period. When caring for a labouring woman, a vaginal examination is an essential skill for the midwife. It should be undertaken sensitively but efficiently, and the findings attained will help assess progress and inform intrapartum care.

Background

Over time, vaginal examinations have been a well-established, accepted and standard practice in intrapartum care. The procedure, carried out by midwives, doctors and obstetricians, enables the assessment of progress in labour and allows procedures, such as artificial rupture of membranes, to be performed. Vaginal examinations provide both the woman and the midwife with information that labour is progressing towards birth. They also help professionals to identify when labour is deviating from the normal physiological course. Nonetheless, even though vaginal examinations are considered a necessary assessment technique, performing too many vaginal examinations in a normally progressing labour is contraindicated; it increases the risk of infection and has the potential to cause the woman unnecessary physical pain and psychological anxiety.

It is also important to note that women, who may have experienced sexual abuse or traumatic obstetric procedures, often find internal examinations distressing and might even refuse the procedure. Midwives are in a prime position to prevent women from feeling traumatized during childbirth and should practise sensitively, with insight, empathy, and active listening to ascertain the needs of the woman. This enables the formation of a trusting relationship and reinforces the holistic approach to pregnancy, childbirth and sexuality.

Assessment:

Indications for VE:

- Confirm the onset of labour.
- Assess progress during labour (assessment can be offered 4-hourly; earlier only if there is concern regarding progress of labour.)
- Identify the presentation, position and descent of the presenting part.
- Determine effacement, dilatation and consistency of the cervix.
- Identify whether the fore-waters have ruptured.
- Perform an artificial rupture of membranes.
- Apply a fetal scalp electrode.
- Exclude cord presentation or cord prolapse.
- Confirm the onset of the second stage of labour.

VE is contraindicated in:

- Antepartum hemorrhage (unless the fetal head is palpable 2/5 or less above the brim or there are signs of placental abruption)
- Placenta praevia or unknown placental localization
- Preterm pre-labour rupture of membranes (PPROM)

A vaginal examination should always be preceded by an abdominal examination. In addition, vaginal examinations should ideally be carried out by the same midwife throughout labour, as this will help reduce inter-observer variability and inaccuracy, especially since vaginal examinations can be an imprecise measure of progress.

Procedure:

1. Explain the procedure to the woman and gain informed consent.
2. Encourage the woman to empty her bladder.
3. Gather the necessary equipment.
4. Ensure that privacy and dignity are maintained throughout the procedure.
5. Perform an abdominal examination so as to gain additional confirmation for VE findings and to ensure normal fetal heart rate prior to procedure.
6. Ask the woman to adopt a semi-recumbent position with her knees bent, ankles together and knees parted.

7. Place a disposable sheet beneath her buttocks.
8. Ask the woman to remove any sanitary towels and underwear whilst providing a modesty sheet.
9. Wash and dry hands to avoid cross-infection.
10. Prepare lubricant gel.
11. Wear sterile gloves.
12. If cleansing is necessary, swab the vulva from front to back using cotton wool balls soaked in water, which are passed from the examining or dominant (clean) hand to the non-examining or non-dominant (dirty) hand.
13. Observe the external genitalia and the vaginal introitus for:
    - Scarring indicating episiotomy, prior perineal surgery or circumcision (record type of Female Genital Circumcision [FGC]
    - Varicosities
    - Oedema
    - Signs of infection e.g. genital warts
    - Discharge (note amount, colour and odour)
    - Show
    - Bleeding
    - Amniotic Fluid (note colour)
    - Meconium
14. Lubricate the first two fingers of the dominant hand.
15. Part the labia with the thumb and the forefinger of the non-examining hand.
16. Gently, introduce the first two fingers of the examining hand into the vagina in a downward and backward direction.
17. Locate and gently examine the cervix and presenting part.
18. Assess the pelvis by palpating the ischial spines. Note any prominence.
19. Determine:
    - State of cervix, the position; tone; degree of effacement (in cm) and dilatation
    - State of membranes
    - Presenting part – application to cervix, position, degree of flexion and station
    - Degree of moulding
    - Presence of caput succedaneum

- Any divergence from the norm e.g. umbilical cord or compound presentation
- State of vagina and any vaginal loss

20. Gently, withdraw fingers and note the angle of the suprapubic arch.
21. Dry the vulva region and help the woman to position a new sanitary towel.
22. Auscultate the fetal heart.
23. Assist the woman into a comfortable position and discuss the findings.
24. Dispose of equipment as appropriate and perform hand hygiene.
25. Document the findings and act accordingly.

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POSITIONS IN LABOUR

Scope:

The purpose of this guide is to discuss and outline the evidence-base which supports the use of various positions during the labour. Needless to say, care should always be individualised to the needs of each woman and her partner. Moreover, care is perceptibly managed and implemented according to the professional judgement of the midwife.

Background

There are significant advantages to assuming an upright position in labour and birth (Lawrence et al., 2009; MIDIRS, 2008). However, the supine position continues to be the most frequently used position (RCM, 2010). The environment is key to freedom of movement. Therefore, in a birthing room there should be a variety of furniture and props available so that women are encouraged to try different positions (Albers, 2007). The use of electronic fetal monitoring, intravenous infusions and different methods of analgesia may affect a woman's mobility and use of postural change during labour (Spiby et al., 2003). However, midwives have the ability to support women with suggestions on how to remain upright in these situations (RCM, 2011).

The use of upright positions for the second stage of labour confers several benefits including a shorter second stage, fewer instrumental births and fewer episiotomies, although the estimated blood loss is greater (de Jonge et al., 2004; Gupta et al., 2004). Use of the lateral position for birth appears to protect the perineum (Shorten et al., 2002) whereas using a birthing chair has been associated with third and fourth degree tears (Jander & Lyrenas, 2001). Women should be encouraged and helped to move and adopt whatever positions they find most comfortable throughout labour (NICE, 2007).

Physiological advantages of using upright positions in labour

Physiologically, the use of upright positions mobilises the force of gravity on the passenger in labour (the fetus). In addition it confers a reduced risk of aortocaval compression and concomitantly fetal compromise. Movement also encourages better alignment and rotation of the fetus and stimulates more efficient contractions. In effect, a Cochrane Systematic Review

by Lawrence et al. (2009) concluded that upright positions and walking in labour are associated with a reduction in the length of the first stage of labour and the use of epidural analgesia. Certain positions are also favourable in order to create more room for the presenting part. The squatting and/or kneeling position are particularly effective in increasing the pelvic outlet and hence facilitating descent and delivery of the presenting part (MIDIRS, 2008). The use of the birthing/Swiss ball in the second stage is also thought to be supportive by providing counter pressure on the perineum which aids descent in second stage pushing. This can be especially helpful when the head is high as the upright open position with the perineal support that the ball provides can maximise pelvic capacity.

Birthing positions can also have a psychological impact on the women's experience of labour since being able to decide on a comfortable position which facilitates her progress can influence her feeling of being in control of her labour (de Jonge & Lagro-Jansenn, 2004; Green & Baston, 2003; Green et al., 1990). Midwives will need to be proactive in demonstrating and encouraging different positions. The labour environment is essential to women's ability and opportunity to try different positions (Albers, 2007; MIDIRS, 2008).

Care guidelines:

There should be appropriate furniture and props readily available: bean bags, mattresses, chairs, mats, baths and birthing/Swiss balls (RCM, 2011). Advise women that position changes can help them progress, relax and cope with the pain, especially if the birth partner is involved.

Standing

This is an ideal position for labour and delivery as the force of gravity naturally helps the baby to move down the pelvis.

Sitting

The best sitting position is back-to-front on a chair so the backrest is in front of the woman. The action of the knees having to be apart will help widen the pelvis and allow descent of the head.

Squatting

Squatting is an excellent position especially during the second stage as it helps in the descent of the fetus. The birthing partner could assist by sitting on a chair behind the woman whilst she squats face outwards so that her arms are resting on his/her knees.

All-fours pos

This position is beneficial when the fetus is lying in occipito-posterior position, as it reduces backache and encourages rotation (Stremler et al., 2005). This position can also be achieved by leaning over a birthing ball. An open knee-chest position can help to reduce the premature urge to push, while a closed knee-chest position is useful if the cervix is oedematous (Hanson, 2009).

Side-lying

Side-lying on the same side as the position of the fetal spine, encourages fetal rotation from an occipito-posterior to an occipito-anterior position e.g. the woman should lie in the right lateral position if the fetus is lying in the right occipito-posterior position (Ridley, 2007). Side-lying may also be an alternative position for women with restricted mobility.

Kneeling

Kneeling is also a useful position to relieve back pain. Kneeling whilst leaning forward can also help open the pelvis. This can be done on a birthing ball, over stacked pillows or by raising the head of the bed and leaning forward on it.

Rocking

Rhythmic movements can also feel soothing during labour. This can be done on a birthing ball or whilst standing.

Supine

This position should be avoided during labour. Due to aortocaval compression, the supine position is associated with alterations in the fetal acid-base status (Lewis et al., 2002). Additionally, contractions tend to be less strong when compared to upright or lateral positions (Lewis et al., 2002). If the women wishes to lay down it is advisable to place a wedge under the woman's side to prevent aortocaval compression or elevate the backrest to a semi-recumbent position.

Semi-recumbent

There is little evidence to support the use of this position, however, women may need to rest and adopt this position periodically during labour (Kerrigan, 2006). Additionally, this position is adopted when certain procedures are required.

OTHER POSITIONS

Follow-up:

It is recommended to document the positions used during labour and if necessary give appropriate handover regarding the care given and what was found to be effective.

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USE OF TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION [TENS] IN LABOUR

Scope:

The purpose of this guide is to explore the use, function and effectiveness of using TENS in labour. This should be discussed with the woman and her partner if they intend to use TENS during labour. The guide will i) summarise the role and responsibilities of the midwife and ii) describe how TENS is applied and used.

Background

More research is needed on the effects of transcutaneous electrical nerve stimulation (Jones et al., 2012). In a review of studies Baldwell et al. (2009) argue that there is limited evidence that TENS is an effective method of pain relief during labour. Nonetheless, the use of TENS does not seem to have any impact on maternal and neonatal outcomes (Baldwell et al., 2009). Hence, given the absence of adverse effects, pregnant women may be supported in their right to choose this form of pain management.

Care guidelines:

1. Obtain a verbal consent for the woman's informed choice of analgesia
2. Position the woman to obtain access to her back area
3. Prior to application ensure the unit is switched off, but fully charged with the electrodes connected and all the controls are on the lowest possible setting
4. Identify the correct position of the electrodes (refer to user manual) and apply them using tape and electrode gel if necessary
5. Switch the unit on
6. Show the woman how to increase the intensity according to need and explain the function of the boost button
7. Ensure that the woman is comfortable
8. Replace clothing, securing the unit in a pocket, leaving the boost button accessible
9. Ensure that there is no electrical interference with any other items being used
10. Document application and effect

11. Discontinue the use of TENS at the end of labour or according to the woman's wishes
12. Switch the unit off, remove electrodes, clean reusable electrodes, service and maintain the unit according to the manufacturer's instructions

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IMMERSION IN WATER DURING THE FIRST STAGE OF LABOUR

Scope:

The aim of this guide is to explore and outline midwifery management for the immersion of women in water during the first stage of labour.

Background

Immersion in water during the first stage of labour has been associated with a decrease in interventions such as the need for augmentation, and perceived positive physiological effects such as less painful contractions (Royal College of Obstetricians & Gynaecologists & Royal College of Midwives, 2006). The use of intrapartum hydrotherapy is associated with a reduced first stage of labour and reduced use of epidural analgesia (Cluett & Burns, 2009). It has also been suggested that water immersion during labour increases maternal satisfaction and sense of control (Richmond, 2003). There is no evidence of increased adverse effects to the fetus/neonate or woman from labouring in water (Cluett & Burns, 2009).

Assessment:

Eligibility Criteria:

Antenatal:

- Healthy women with no medical or obstetric risk factors
- Singleton pregnancy
- Cephalic presentation
- At least 37 completed weeks pregnant
- Not a carrier of/ infected with HIV, Hepatitis B, or Hepatitis C
- Body mass index equal to or less than 35 pre-pregnancy or at the booking visit (completed at <12 weeks gestation)

Intrapartum:

- There is no contra-indication to the use of intermittent auscultation of the fetal heart
- All maternal and fetal observations remain within the normal range
- Clear amniotic fluid in the presence of a reassuring fetal heart rate

Special Circumstances:

- Positive Group B Streptococcus vaginal swabs during pregnancy are not a primary contraindication for water immersion provided that antibiotics guidelines are adhered to (Department of Health Western Australia, 2004; Cohain, 2010)
- Women with ruptured membranes for more than 18 – 24 hours may utilise immersion in water during labour and birth provided that any recommended antibiotics are administered (Department of Health Western Australia, 2004; Cohain, 2010)
- Limited relevant evidence is available on the use of intrapartum immersion in water in cases of prostaglandin or oxytocic induced or augmented labour (Royal College of Obstetricians & Gynaecologists & Royal College of Midwives, 2006). The safety of this technique in such cases may depend on the reason for induction and on the availability of cardiotocography (CTG) monitoring equipment that is safe for underwater use to allow the continuous monitoring of the fetal heart rate.

Exclusion Criteria

- The presence of antenatal/intrapartum risk factors such as prolonged rupture of membranes (> 24 hours), maternal pyrexia, meconium or blood stained liquor, abnormal fetal heart rate on auscultation, established first stage labour > 12 hours
- Sedation, specifically systemic opioid within 2 hours. The only exception is Nitrous oxide and oxygen (Entonox®). Immersion in water should be avoided in the presence of drowsiness (National Institute for Health and Care Excellence, 2007).
- Malpresentations
- Obesity (defined by body mass index (BMI) >35 at booking)

N.B. Recommendations for eligibility criteria and contraindications were generally based on research findings encompassing immersion in water in all stages of labour (including the second and third stage). Therefore they may not always apply to the first stage of labour. Thus it is suggested that subpopulations of women should not be universally prevented access to water immersion but dealt with on a case-by-case basis (Young & Kruske, 2012).

Management:

a. All women with a low-risk pregnancy at term should be informed and offered the option of labouring in water providing that an appropriate bath is available.
b. If a woman is considering the use of immersion in water during labour this should ideally be discussed with the woman prior to labour to enable the woman to make a fully informed decision.
c. Agreement to the use of water immersion needs to be obtained and documented after discussion with the woman
d. The midwife must be confident and competent to facilitate a woman's labour in water. She should have access to training/clinical practice in the use of water during labour and in the correct procedure for assisting the woman to leave the water in an emergency situation.
e. The midwife or a support person must remain with the woman at all times to maintain safety whilst she is immersed in water.
f. There is no reliable evidence to support or refuse the use of any additive, such as essential oils, in the water (Cluett & Burns, 2009).
g. The water level should be to the maternal breast level when sitting, to facilitate comfort.
h. Maternal and fetal observations should be assessed and documented prior to the woman entering the water as a baseline for continued assessment.
i. There is a lack of robust evidence to recommend the timing of water immersion but some research suggests that it is advisable for a woman's labour to be established before entering the water (cervical dilatation ≥ 3 cm and regular contractions). Early labour could be managed by mobilisation and other activities (Royal College of Obstetricians & Gynaecologists & Royal College of Midwives, 2006).
j. Narcotic analgesia should not be administered whilst women are using the pool, however Nitrous Oxide (Entonox®) can be used in conjunction with water immersion under proper supervision.
k. Times of entering and leaving the water should be clearly documented, including the reason for leaving, if appropriate.
l. Fetal heart monitoring should be undertaken as per the standard guidelines for a healthy woman and her fetus during a normal labour e.g. by Structured Intermittent Auscultation

[SIA] every 15 minutes. Fetal heart rate must be monitored using a Doppler fetal monitor that is safe for underwater use.

m. The temperature of the woman and the water should be monitored hourly to ensure that the woman is comfortable and not becoming pyrexial. The temperature of the water should not be above 37.5° C (National Institute for Health and Care Excellence, 2007).
n. If the woman feels too hot or her temperature becomes raised then she should leave the water until she has cooled down. The water temperature should be checked and cold water added if necessary. Maternal temperature should be rechecked within 30 minutes.
o. If the maternal temperature is greater than 37.6°C on 2 occasions, the woman should leave the water. A full assessment of maternal and fetal wellbeing should be completed and consultation should be considered.
p. The woman should be encouraged to drink to prevent dehydration.
q. The women should be encouraged to leave the water to urinate at least in 2 hourly intervals and to defecate if needed.
r. The water should be kept as clean as possible. If the water becomes heavily contaminated, the woman should be asked to leave the water so that it can be cleaned and refilled.
s. The woman may be asked to leave the bath temporarily if and when vaginal examinations are necessary.
t. The woman is required to leave the water if an intrapartum risk factor develops or is detected.
u. The woman must be fully assisted when leaving the water.
v. Quality assurance measures should be in place to ensure safety of the technique and should include regular checking of the quality of the water reaching the bath/pool, infection control procedures, and bath cleaning arrangements.

<u>Criteria for Exiting Bath</u>

- Signs of potential fetal compromise
- Maternal distress
- Maternal request for analgesia other than Entonox®
- Maternal choice
- If contractions reduce or become ineffective (the woman may be able to re-enter the birth pool when contractions improve)

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EXAMINATION OF THE PLACENTA

Procedure:

1. Explain the procedure to the parents and enquire if they wish to observe the examination.
2. Gather the necessary equipment such as gloves, apron, disposable protective cover and disposal bag or receiver for the placenta.
3. Wash hands, wear apron and gloves.
4. On a flat surface, lay the placenta, fetal surface uppermost, onto the disposable cover.
5. Note its size, shape, smell and colour.
6. Observe the fetal surface for any irregularities.
7. Examine the cord and note the length, insertion point, presence of knots and number of vessels in the cut end of the cord.
8. Lift the placenta from the surface and turn it over, maternal surface uppermost.
9. Replace on surface and spread the membranes upwards.
10. Examine the hole in the membranes and look for any extra vessels, extra lobes, or unexplained holes.
11. Separate the amnion and chorion and pull them back to examine the cotyledons.
12. Ensure that all cotyledons are present, and note the size and amount of areas of infarction, calcification or blood clots.
13. Weigh or swab the placenta if indicated.
14. Dispose of the placenta and equipment correctly.
15. Wash hands and remove apron.
16. Discuss the findings with the parents.
17. Document the findings and act accordingly.

POSTNATAL EXAMINATION

Aim:

Postpartum care is targeted towards assisting the mother and her baby to attain an optimum health status following the birth. Midwifery care must be holistic in addressing the various facets of the postpartum period. This would include supporting the normal recovery from birth and adaptations to motherhood including neonatal care. However, midwives must also be observant for any deviations from the norm. Hence the postnatal examination is a crucial skill which can assess and address issues important to the woman's wellbeing including; uterine involution and lochia, perineal care, Caesarean section wound care, mobility, fatigue, pain management, breast care, nutrition and elimination, education regarding hygiene and prevention of infection, and psychological wellbeing.

Assessment and examination:

1. Explain the procedure to the woman and gain her consent. If needed, give the woman an approximate time for when you will be available to undertake her postnatal examination.
2. Prior to undertaking the examination, ask the woman if she needs to empty her bladder.
3. Read her notes so as to appreciate her birth experience, to identify any issues requiring special attention and to evaluate any previous care/advice.
4. Maintain her dignity and ensure privacy, affording her the opportunity to disclose any personal information.
5. Wash hands, to reduce the risk of cross-infection.
6. Sit at eye level with her and ask her how she is feeling, sleeping and eating. Discuss emotional wellbeing and explain regarding baby blues and postnatal depression. Enquire regarding family/social support once she returns back home.
7. Observe her physical appearance and record her parameters (blood pressure, pulse and temperature). Advise her on the signs and symptoms of pre-eclampsia which can occur in the first 72 hours from birth (headaches and nausea/vomiting/visual disturbances).

8. Ask her how her breasts feel. Inform her how to examine her breasts. Discuss current and expected breast changes. Advise her on how to manage or seek help for any problems, such as engorgement, red areas or lumps.
9. If she is breastfeeding, give appropriate advice and assistance. Discuss positioning and attachment, nipple care during and after feeds, duration and frequency of feeds.
10. Plan to assist her with breastfeeding at the next feed so as to ensure correct attachment and positioning.
11. If the woman is using formula feeding, provide one-to-one explanation and if necessary, demonstration, to ensure safe preparation and practice of formula feeding.
12. Explain and assess uterine involution by gentle palpation of the abdomen (refer to Postnatal Abdominal Palpation of the Uterus).
13. If the woman had a Caesarean section, assess the wound site and note any post-operative wound care required. Discuss issues of hygiene and prevention of infection, medications (e.g. analgesia, antibiotics), wound care and lifestyle modifications for the 6 week post-operative period with the woman. Advise her on the signs and symptoms of wound complications (separation of the wound edges, dehiscence, abnormal pain, discharge, redness, fever, localised heat/swelling)
14. Ask the woman about her blood loss. Lochial loss can be assessed by examining the pad. Check when the pad was last changed to obtain an idea of the extent of the loss. Gloves should be worn if contact with body fluids is anticipated.
15. Advise her on the signs and symptoms of post-partum haemorrhage (clots, increase/persistent lochia, fainting, palpitations/tachycardia) and infection (offensive smelling lochia, fever, abdominal pain).
16. Ask the woman about perineal pain or discomfort. Examine if affirmative, to assess if sutures, wounds, swelling, bruising or abrasions are clean and healing. Give advice on perineal hygiene and pain relief (e.g. cold therapy using ice/gel pads, paracetamol, NSAIDs). Discuss resumption of sexual intercourse and possible dyspareunia.
17. Ensure the woman has passed urine within 6 hours from birth. Ask her if she's passing urine normally after the birth and encourage pelvic floor exercises.
18. Ask the woman about her bowel habits. If she has haemorrhoids, give advice on how to manage them and offer dietary advice.

19. Observe legs. Asses leg comfort, veins and oedema if any, and encourage leg exercises to help prevent deep vein thrombosis. Advise her on the signs and symptoms of thromboembolism (calf pain, redness or swelling of calves, shortness of breath/chest pain).
20. Ask the woman if she is doing any postnatal exercises; explain their importance and encourage mobilisation.
21. Advise that contraception should be commenced from 3 weeks postpartum. Discuss natural family planning and artificial methods of contraception.
22. Ask the woman if she has any concerns or questions.
23. Wash hands to minimize the risk of cross-infection
24. Communicate findings with the woman.
25. Complete documentation and act accordingly.

Follow-up:

Plan and document follow-up care in the woman's individualised postnatal care plan. One of the primary aims of postnatal care is to empower the woman to take care of herself and her baby and facilitate her transition to parenthood. Organise any necessary referrals including community midwifery, Breastfeeding clinic, Well-baby clinic and a gynaecological 6-8 week check-up. Postnatal care should be planned in partnership with the woman and ideally meets the needs of the woman and her baby for up to 6-8 weeks.

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POSTNATAL ABDOMINAL PALPATION OF THE UTERUS

Aim:

The purpose of this midwifery skill is to identify the position and height of the fundus in the abdomen, to assess the condition of the uterus with regard to uterine muscle contraction, and finally, whether palpation of the uterus causes the woman any pain. When all these parameters are noted, an overall assessment of the state of the uterus is provided and the progress of uterine involution can be described.

Procedure:

1. Confirm that palpation is necessary.
2. Gain informed consent.
3. Ask the woman to empty her bladder if she has not done so recently.
4. Wash and warm hands.
5. Ask the woman to lie in a recumbent position with her arms by her side.
6. Ensure that she is comfortable.
7. Maintain privacy.
8. Expose the woman's abdomen.
9. Note any features that might affect the palpation, such as obesity or degree of healing for caesarean section wound.
10. Using the outer aspect of one hand, gently depress the abdomen to feel for the fundus.
11. When the fundus is felt, use the outer aspect of the hand to estimate the height and position of the uterus.
12. Depress slightly further down into the abdomen to feel over the top of the fundus. The fundus of the uterus should be located centrally, its position being at the same level or slightly below the umbilicus following delivery.
13. Assess the uterine tone. The uterus should be in a state of contraction, feeling firm under the palpating hand. A well-contracted uterus is often described as feeling like a cricket ball.
14. Note whether the woman displays any non-verbal uterine or abdominal discomfort or expresses any pain on palpation.
15. If lochial loss is heavy, the uterus should be palpated at the same time as examining the pad to see if on palpation any clots are expelled from the uterus.

16. Re-cover the woman.
17. Assist the woman to a comfortable position.
18. Wash hands.
19. Discuss the findings with the woman.
20. Document the findings and act accordingly.

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SKIN-TO-SKIN/KANGAROO CARE

Scope:

To aim of this guide is to outline the management of skin-to-skin or kangaroo care for healthy term neonates in the delivery suite and obstetric wards as well as preterm/low-birth weight/term neonates in the Neonatal and Paediatric Intensive Care Unit [NPICU].

Background

Skin-to-skin care is a method of holding an infant in skin-to-skin contact and prone on the chest of the parent. In preterm infants it is associated with better cardio-respiratory stability and thermoregulation (Ali et al., 2009; Moore et al., 2007; Rao et al., 2008), and reductions in clinically important adverse outcomes, including infections, severe illness, lower respiratory tract disease, maternal dissatisfaction with the method of care, and failure to exclusively breastfeed at hospital discharge (Conde-Agudelo et al., 2003). In healthy neonates it has been found to calm and relax both mother and baby, stimulate digestion, regulate temperature, encourage feeding behavior, and stimulate the release of hormones to support breastfeeding and mothering, thus supporting parental-infant bonding (Baby Friendly Initiative UNICEF, 2009). Early skin-to-skin contact is associated with an increased likelihood to breastfeed and increased duration of breastfeeding (Moore et al., 2007).

Care guidelines:

Skin-to-skin care can be employed immediately upon the birth of the healthy newborn. Subsequently, this can be continued regularly and consistently with both healthy neonates and medically stable premature infants, including those requiring respiratory support.

1. Plan a suitable time with parent
2. Offer the parent(s) information about skin-to-skin contact, explain procedure, and gain consent
3. Advise parent to wear suitable, loose fitting clothing, with easy access to chest
4. Ensure parent is comfortable e.g. they are pain free, and have been to the bathroom
5. Provide a comfortable chair or bed, preferably one that reclines

6. Provide a calm, warm environment and ensure privacy
7. Ensure that the parent is aware that infant may be temporarily unsettled during transfer
8. Wash hands
9. Prepare infant by undressing him/her and ensuring that he/she is clean and comfortable. The infant can be undressed completely, or be kept in a nappy, warm hat and/or socks depending on ambient temperature and parent preference
10. Gain access to parent's bare chest by opening/raising/removing clothing
11. Move infant gently to parent's chest, positioning infant so that he/she is prone or side-lying with head to the side on parent's sternum and legs flexed
12. Encourage parent to support infant's head and body
13. Use blanket or parent's clothing to cover infant's back and provide support, ensuring that the infant has adequate room to breathe
14. Place hat on infant if necessary
15. Maintain skin-to-skin contact for as long as is desired by parent, preferably for an hour or more
16. Document reason for using technique, and frequency and duration of skin-to-skin contact.

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IMMEDIATE CARE OF THE NEWBORN

Scope:

This guide is intended to provide an aid for midwives and other health professionals to provide effective care to the newborn at birth.

Background

In most births (approximately 90%) the newborn's transition from intrauterine to extrauterine life will occur spontaneously and without complications. However 10% require some form of resuscitation, a per cent of which will take the form of extensive methods of resuscitation (American Academy of Paediatrics & American Heart Association, 2011). The basis of assessment and management of immediate care of the newborn and when necessary resuscitation is always founded on the **ABC** mnemonic for Airway, Breathing and Circulation.

Assessment and Management:

ASSESS THE IMMEDIATE CONDITION OF THE NEWBORN AT BIRTH

1. Ensure the lighting is sufficient to allow good visualization and ensure good access to the baby. Note the timing of delivery and in the first few seconds after birth, perform a rapid visual assessment of the baby to answer the following questions:
   - → Is the baby term?
   - → Is the amniotic fluid clear?
   - → Is the baby breathing or crying?
   - → Is there good muscle tone?

   If the answer to all is "yes", provide warmth, clear the airway if needed, dry and place skin-to-skin with mother. Progress with routine care as presented in steps 2 – 5 of this guideline.

   If the answer to any of the questions is "no", the infant may be evaluated under a radiant heat source during the initial steps of resuscitation as presented in steps 6 – 11 of this guideline (Gardner et al., 2007).

2. At 1 minute undertake the first assessment (Apgar score), assessing the five variables quickly and simultaneously to total the score:
   → Observe the appearance
   → Estimate the heart rate by palpating the umbilicus or placing two fingers across the chest over the apex, count the rate for 6 seconds and multiply by 10
   → The response of the baby to stimuli should be noted
   → Observe the muscle tone of the baby by observing the amount of activity and degree of flexion of the limbs
   → Observe the respiratory effort made by the baby

   Act promptly and appropriately according to the score.
3. Repeat the Apgar score at 5 minutes, noting that the score should increase if previously 8 or less.
4. Repeat at 10 minutes.
5. Document findings and act accordingly. Initiate breastfeeding if mother and newborn are well.

INITIAL RESUSCITATION

6. In the first 30 seconds:
   → If needed place the infant under a radiant heat source. Dry the newborn thoroughly, provide warmth and remove the wet linen. Position and clear the airway.

   → If **meconium** was/is present, evaluate the vigour of the infant:
      i. Does the baby have good strong respiratory efforts?
      ii. Is there good muscle tone?
      iii. Is the heart rate greater than 100bpm?

   If the answer to any of the questions is “no”, call for further assistance as the infant requires endotracheal intubation for suctioning (Gardner et al., 2007).
   If the answer to all the questions is “yes” move to the step below.
   → Position the infant supine and flat with the neck slightly extended. Turn the head to the side to allow secretions to pool in the cheek and then remove, if needed, with a suction catheter. Suction the mouth and then the nose to clear the airway.

Deep pharyngeal suction in an infant not requiring positive pressure ventilation or intubation should not be performed during the first few minutes to avoid vagal stimulation.

→ Provide tactile stimulation by briefly rubbing the back or gently flicking the feet, to support early respiratory efforts in the newborn.

→ Keep the head and neck in a slightly extended position to maintain an open airway.

7. Evaluate the infant (this is a continuous and on-going process):
   → Evaluate respirations: rate and depth of respirations must be adequate; apnoea and gasping respirations require **Positive-Pressure Ventilation**.
   → Evaluate colour: the lips and trunk should be pink. If the infant is breathing but remains centrally cyanotic give **free-flow Oxygen**. Peripheral cyanosis is not an indication for supplemental oxygen.
   → Evaluate heart rate: heart rate should be greater than 100bpm. Feel the base of the umbilical cord or listen over the left side of the chest with a stethoscope to count the heart rate. Count the heart rate in 6 second intervals and multiply by 10. It may be helpful to indicate each beat for the other team members by tapping your forefinger on the resuscitor.

NOTE

The infant needs positive-pressure ventilation if:

→ Is apnoeic or gasping despite the brief period (30 seconds) of tactile stimulation.

→ Has a heart rate of less than 100bpm

→ Has persistent central cyanosis despite free flow oxygen.

Prolonged tactile stimulation or administration of free flow oxygen to a baby who is not breathing affectively or who has a heartbeat less than 100bpm only delays appropriate treatment. It is essential that the newborn initiates breathing or receives PPV proximal to the first minute.

Ensure PPV is performed effectively as this is generally sufficient to restore heart rate, blood pressure and pulmonary blood flow (AAP & AHA, 2011).

8. If the infant has effective ventilation or becomes pink after supplemental oxygen continue to observational care (AAP & AHA, 2006).
9. If after effective positive-pressure ventilation with supplemental oxygen, the infant has effective ventilation, is pink and has a heart rate of more than 100bpm, continue to post-resuscitation care (AAP & AHA, 2006).
10. If after 30 seconds of effective positive-pressure ventilation with supplemental oxygen, the heart rate is less than 60bpm, begin **Chest Compressions** (at a rate of 3 compressions to 1 ventilation).
11. If the heart rate remains below 60bpm despite 30 seconds of effective positive-pressure ventilation with oxygen and chest compressions, prepare for resuscitation with drugs (epinephrine will be prescribed by the pediatrician).

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EXAMINATION OF THE NEWBORN

Scope:

The aim of this guide is to aid midwives and health care practitioners in understanding the relevance of the examination of the newborn and its significance in identifying normality and recognising abnormality. It also notes where it is necessary to refer appropriately.

Assessment and examination:

PERFORM A THOROUGH EXAMINATION OF THE INFANT AT BIRTH

1. The procedure is explained to the parents and informed consent gained
2. Wash and dry hands, put on gloves if required
3. Ensure adequate lighting to allow clear visualization, have good access to the baby and perform the examination preferably in the presence of one or both parents
4. Check that the baby is warm. To maintain temperature control, only uncover the part of the baby being examined and re-cover
5. Examine the baby systematically and thoroughly:
    a. Head: look for signs of moulding and caput succedaneum. Examine for signs of trauma, bruising, cephalhaematoma or subgaleal hematoma (more likely following instrumental delivery). Feel along the suture lines and fontanelles and assess their size and appearance.
    b. Shape of the face: assess the face for symmetry noting the size and position of the eyes, nose, mouth, chin and ears in relation to one another.
    c. Eyes: examine the eyes to ensure that two are present, assessing their size, shape and any slanting. Cataracts can be noticeable by a cloudy appearance on the cornea. Exclude any discharge and note for the presence of conjunctival haemorrhage. Note the shape of the pupils. These should be round.
    d. Nose: Note the shape and width of the nose which should be greater than 2.5cm in the term infant. The nose should not be squashed at birth and the nostrils should not flare. Check that both nostrils are patent by blocking each nostril in turn and note whether the infant continues to breathe through the other nostril.

e. Mouth: the lips should be formed and symmetrical to exclude facial palsy. Examine the area between the mouth and the nose for the presence of a cleft lip. Visualize the inside of the mouth using a good light source by gently pressing on the chin to encourage the baby to open his mouth or when he is crying. The palate should be observed for intactness, particularly at the junction of the soft and hard palate ideally without placing a finger in the mouth. Note for the presence of white spots on the gums or palate when looking inside the mouth. The length of the frenulum should also be assessed.
f. Ears: ensure that both ears are present and fully formed, in the correct position. The ears of the term infant should spring back into position when moved forward. Ensure correct positioning of the ears by tracing an imaginary line from the outer canthus of the eyes horizontally back to the ears, the top of the pinna should be above this line. The external auditory meatus should be examined to ensure patency. Look for the presence of accessory skin tags or auricles.
g. Neck: examine the neck for symmetry and while moving the fingers around the neck look for the presence of any swelling. The baby should move his head to both sides. There should be no webbing or redundant skin folds at the back of the neck.
h. Clavicles: using the index finger, feel along the clavicles to ensure they are intact
i. Arms: straighten the arms down the side of the baby to compare the two together as they should be the same length. Notice the movement, spontaneous arm movement should be elicited by stroking the forearm or hand. The number of fingers should be counted and examined for webbing. The palm should be straightened and the number of palmar creases noted. Look at the nails to check for the presence of paronychia.
j. Chest: examine the chest for symmetry of movement with respiration. Respiratory rate can be counted and any signs of distress noted and reported. The nipples and areola should be well formed in the term baby and should be symmetrical and not widely spaced. Accessory nipples should be noted.
k. Abdomen: observe the abdomen which should be rounded and should move in synchrony with the chest during respirations. Inspect the area to ensure it is

intact and palpate gently to exclude abnormal swelling. Ensure that the umbilical cord is securely clamped.

l. Genitalia:
    i. Boys: assess the length of the penis which should be around 3cm and the position of the urethral meatus confirmed. The foreskin should not be retracted. The scrotum should be gently palpated for the presence of the testes.
    ii. Girls: ensure the presence of the clitoris, urethral and vaginal orifices by gently parting the labia.

m. Legs: confirm that the legs are the same length by straightening them together and comparing the two. Both legs should be moving freely, eliminating the presence of trauma. The position of the feet in relation to the legs should be noted, noting any positional or anatomical deformities. Note the shape of the feet including any oedema or a 'rocker bottom' appearance. The number of toes should be counted and examined for webbing between them.

n. Spine: examine the spine by turning the baby over and looking for any obvious deformities, swelling, dimpling or hairy patches. Straddle the baby over one hand and with the other hand assesses the curvature of the vertebral column. Gently part the cleft of the buttocks, looking for any dimples or sinuses while confirming the presence of the anal sphincter.

o. Skin: observe the condition of the skin during the examination. Note the colour, and the presence of rashes or marks. Any obvious swelling or spots should be recorded.

p. Elimination: Check that the anus is present. Record the passage of urine and meconium.

q. Weight: the weight of the baby needs to be recorded

6. Dress the baby comfortably and leave it with the parents or lay it securely in a cot.
7. Discuss the findings with the parents.
8. Document findings and act accordingly.

DAILY EXAMINATION OF THE NEONATE

Aim:

This guide is intended to aid midwives and health care practitioners in understanding the relevance of the daily examination of the neonate and its significance in identifying normality and recognising abnormality. It also notes where it is necessary to refer appropriately.

Assessment and examination:

PERFORM A DAILY EXAMINATION OF THE INFANT

1. Begin by discussing the progress of the baby with the parents. Identify any concerns.
2. Explain procedure and gain informed consent
3. Discuss the baby's behavior and activity with the parents
4. Wash hands and put on gloves if required (MDH, 2009)
5. Ensure there is good light and the baby is warm
6. Observe the colour and general appearance of the baby. A term baby should be well-flexed. Note presence and extent of jaundice.
7. Check that the respiratory rate is normal.
8. Examine the head: using the fingertips feel along the suture lines and fontanelles. The anterior fontanelle should be palpated. Note any new swellings, bruises or traumatized area to ensure that they are healing.
9. Examine the eyes: ensure that they are clear and with no sign of discharge.
10. Examine the mouth: using a good light source, examine the mouth which should be clean and moist. The presence of white plaques should be investigated.
11. Examine the skin for any rashes, spots, bruising or signs of infection or trauma. Septic spots should be identified, as should be areas of excoriations. The nails should be examined for paronychia.
12. Examine the umbilicus for signs of separation and exclude infection.
13. Examine the external genitalia and buttocks. Note passing of urine and meconium. Ask the parents regarding urine and bowel patterns.

14. Discuss feeding patterns with the parents. Give appropriate advice, support and if necessary referral in relation to the chosen method of feeding (breastfeeding or formula feeding).
15. Weigh the baby if indicated (MDH, 2012)
16. Redress the baby
17. Discuss the findings with the parents and offer appropriate advice where necessary
18. Document the findings and act accordingly

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