EHC Guidelines

Labor Care Guidelines (Normal Labor)

EGYPTIAN HEALTH COUNCIL

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Abbreviations

- **GDG:** Guidelines Development Group
- **GPS:** Good Practice Statement
- **GRADE:** Grading of Recommendations Assessment, Development and Evaluation
- **AROM:** Artificial Rupture of Membranes
- **BP:** Blood Pressure
- **CCT:** Controlled Cord Traction
- **CTG:** Cardiotocography
- **FHR:** Fetal Heart Rate
- **IM:** Intramuscular
- **IV:** Intravenous
- **NICE:** National Institute for Health and Care Excellence
- **PPH:** Postpartum Hemorrhage
- **RMC:** Respectful maternity care
- **ROM:** Rupture of Membranes
- **SROM:** Spontaneous Rupture of Membranes
- **TXA:** Tranexamic acid
- **VE:** Vaginal Examination
- **VTE:** Venous Thromboembolism
- **WHO:** World Health Organization

Glossary

A

Active first stage:

Is a period of time characterized by regular painful uterine contractions, a substantial degree of cervical effacement and more rapid cervical dilatation from 5 cm until full dilatation for first and subsequent labors.

Active management

An approach to third stage labor that involves the use of uterotonic drugs, controlled cord traction, and cord clamping. It is further classified according to the timing of cord clamping:

- **Delayed cord clamping (modified active management)**: Cord clamping is performed after a short delay (usually 1–3 minutes or until cord pulsations cease), allowing additional placental transfusion to the newborn.
- **Early cord clamping** (often referred to as '**active management'**): Cord clamping is performed soon after birth (<1 minute after birth), as part of traditional active management protocols

Amniotomy (Artificial Rupture of Membranes)

Intentional rupture of the amniotic sac to augment or accelerate labor.

Analgesia
Relief from pain without loss of consciousness. May be non-pharmacological (e.g., breathing, massage) or pharmacological (e.g., inhalational agents, opioids, epidural).

Anesthesia
A medically induced loss of sensation with or without loss of consciousness. Includes local, regional (spinal or epidural), and general anesthesia depending on the procedure.

Auscultation
Listening to fetal heart sounds using a Pinard stethoscope or Doppler device to assess fetal well-being.

B

Birth Position

The posture a woman adopts for giving birth. Upright or chosen positions are encouraged unless contraindicated.

C

Caput Succedaneum

Localized swelling of the fetal scalp caused by pressure during labor; typically resolves within a few days after birth.

Cardiotocography (CTG)

Electronic recording of fetal heart rate and uterine contractions.

Cervical Dilatation

The gradual opening of the cervix from 0 cm to 10 cm. Full dilatation marks the end of the first stage of labor.

Clinical Pelvimetry

Manual assessment of pelvic dimensions to evaluate capacity for vaginal delivery. Routine pelvimetry in normal labor is not recommended.

Controlled Cord Traction (CCT)

Gentle traction applied to the umbilical cord with counter-pressure on the uterus to assist in placental delivery.

E

Effacement
Thinning and shortening of the cervix during labor, expressed as a percentage (0–100%).

Epidural Analgesia

Regional pain relief achieved by injecting a local anesthetic and/or opioid into the epidural space through a catheter. Provides effective pain relief while allowing the woman to remain awake.

Enema
Introduction of fluid into the rectum to stimulate bowel evacuation.

Engagement

The point during labor (or sometimes before labor in primigravidae) when the widest transverse diameter of the fetal presenting part (usually the biparietal diameter of the fetal head) has passed through the plane of the maternal pelvic inlet (brim).

Episiotomy
Surgical incision of the perineum to enlarge the vaginal opening during childbirth.

F

Fetal Heart Rate (FHR)

The number of fetal heartbeats per minute (normally 110–160 bpm). Monitored to assess fetal well-being.

Fundal Height

Measurement from the symphysis pubis to the uterine fundus, used to assess fetal growth and position.

Fundal Pressure

Manual pressure applied to the uterine fundus during the second stage of labor to assist delivery.

H

High-Risk Labor

Labor with identified maternal, fetal, or obstetric complications (e.g., pre-eclampsia, multiple pregnancy, meconium, abnormal FHR) requiring continuous monitoring and senior supervision.

I

Inhalational Analgesia

Pain relief through inhalation of gases, most commonly Entonox (50% nitrous oxide + 50% oxygen). Provides moderate pain relief with rapid onset; may cause dizziness or nausea.

L

Latent first stage

Is a period of time characterized by painful uterine contractions and variable changes of the cervix, including some degree of effacement and slower progression of dilatation up to 5 cm for first and subsequent labors.

Liquor (Amniotic Fluid)

Fluid surrounding the fetus in the amniotic sac; assessment of its color, odor, and consistency helps determine fetal condition.

Low-Risk Labor

Labor in a healthy woman with no maternal or fetal complications (singleton, vertex presentation, 37–41 weeks, spontaneous onset).

M

Meconium
Fetal stool sometimes passed into the amniotic fluid before birth; its presence may indicate fetal compromise.

Membrane Rupture

Breaking of the amniotic membranes, either spontaneously (SROM) or artificially (AROM/amniotomy).

Moulding
Overlapping of fetal skull bones during labor to facilitate passage through the birth canal; mild moulding is normal.

N

Normal labor is labor that:

- Occurs between 37+0 and 42+0 weeks completed weeks
- Spontaneous onset

- Singleton gestation
- Vertex presentation
- Normal labor progress
- Spontaneous vaginal birth
- No maternal or fetal complications or risk factors

O

Oxytocin
A uterotonic hormone used for induction, augmentation, or prevention of postpartum hemorrhage (10 IU IM/IV recommended by WHO).

P

Partogram

Graphical record of key observations during labor (cervical dilatation, contractions, maternal and fetal parameters) to monitor progress and detect delay.

Perineal Trauma

Tearing of the perineal tissues during birth, graded from first to fourth degree according to the depth of injury.

Perineal tears

Perineal or genital trauma caused by either tearing or episiotomy:

- first degree – injury to skin only
- second degree – injury to the perineal muscles but not the anal sphincter
- third degree – injury to the perineum involving the anal sphincter complex:

- 3a – less than 50% of external anal sphincter thickness torn
- 3b – more than 50% of external anal sphincter thickness torn
- 3c – internal anal sphincter torn

- fourth degree – injury to the perineum involving the anal sphincter complex (external and internal anal sphincter) and anal epithelium.

Physiological Third Stage of Labor

Placental delivery that occurs naturally without uterotonics or traction, relying on uterine contractions.

Placenta Previa

Placental implantation in the lower uterine segment near or covering the cervical os; contraindication to vaginal examination.

Protracted Labor

Slower-than-expected cervical dilatation in the active phase (less than 2 cm in 4 hours).

R

Retained Placenta

Placenta not delivered within 30 minutes (active management) or 60 minutes (physiological management) after birth.

S

Second stage of labor

The second stage defined as full cervical dilatation until the birth of the baby. There are two identified phases of the second stage—passive and active. Progress of labor in the second stage includes flexion, rotation and descent of the fetal head.

Station

The level of the fetal presenting part relative to the maternal ischial spines, recorded from –3 (above spines) to +3 (on perineum).

T

Third stage of labor

The third stage of labor is the time from the birth of the baby to the expulsion of the placenta and membranes.

U

Uterine Atony

Failure of the uterus to contract effectively after birth, leading to postpartum hemorrhage.

Uterine Tonus Assessment

Palpation of the uterus after birth to ensure it is firm and contracted to prevent bleeding.

Uterotonic

A drug that stimulates contraction of the uterine muscle, used to prevent or treat postpartum hemorrhage. Examples: oxytocin, ergometrine, misoprostol, or fixed-dose combinations.

V

Vaginal Examination (VE)

Digital examination of the cervix and presenting part to assess dilatation, effacement, position, and station. Should be performed only when indicated.

Vertex Presentation

The most common and favorable cephalic presentation in which the fetal head is flexed, so that the occiput (back of the head) leads and the vertex (area between the anterior and posterior fontanelles) is the presenting part.

Voluntary and Involuntary Pushing

Involuntary pushing results from the natural urge during the second stage; women should be supported to follow their own urge rather than directed pushing.

Venous Thromboembolism (VTE) Risk Assessment

Evaluation of the mother's risk of developing blood clots postpartum to guide preventive management.

Executive Summary

This guideline offers evidence-based recommendations on diagnosis and management of normal labor and delivery. The recommendations are intended to provide healthcare professionals with practical guidance on appropriate care and management of women in normal labor. With the aim that proper management of labor would decrease number of unindicated cesarean sections.

List of Recommendations

Recommendation	Strength
History taking:	
• Review history, pregnancy notes and screening results including: – Gestational age – Past history (medical, obstetric, gynecological, surgical, social, family) – Medications, allergies – Pregnancy complications – Investigation results (including placental location) • Ask her about the length, strength and frequency of her contractions • Ask about fetal movements in the last 24 hours • Ask for vaginal losses • Review if there are any antenatal or intrapartum risk factors for fetal hypoxia (see the NICE guideline on fetal monitoring in labor) • Review ER visit history and clinical circumstances at each visit • Assess emotional and psychological needs	**Strong**
Geneal examination:	
• Temperature, pulse, respiratory rate, blood pressure (BP), and urinalysis • Assess nutrition and hydration status and general appearance	**Strong**
Abdominal examination	
• Observation, and palpation including: – fundal height, fetal lie, attitude, presentation, position, engagement/descent • Record time of maternal account of regular, painful contractions: Assess strength, frequency, duration and resting tone for 10 minutes	**Strong**
Auscultation of FHS	
• Intermittent auscultation using either a Pinard stethoscope or a handheld Doppler ultrasound device (e.g. Doptone® or SonicAid®). • Auscultate the fetal heart rate for a minimum of 1 minute immediately after a contraction; palpate the woman's pulse to differentiate between the heartbeats of the woman and the baby.	**Strong**

• Differentiate between maternal and fetal heartbeat.	
Vaginal examination	
Indication of VE • If there is uncertainty about whether the woman is in established labor, a vaginal examination may be helpful after a period of assessment, but is not always necessary • If the woman appears to be in established labor, offer a vaginal examination. • If spontaneous rupture of membranes (SROM) suspected, consider a dry sterile speculum examination. • Routine clinical pelvimetry on admission in labor is not recommended for healthy pregnant women. • Assess and record vaginal loss - Discharge—note color, odor, consistency - Blood—note color, volume - Liquor—note color, volume, odor, consistency - Presence of meconium • Document the presence or absence of meconium. - If meconium is present, consider the character of the meconium. - Meconium may increase the risk to the baby means that: - Continuous CTG monitoring may be advised - Healthcare professionals trained in advanced neonatal life support are needed as soon as the baby is born. **Contraindication to VE** • Antepartum hemorrhage • Ruptured membranes and not in labor • Placenta previa • Placental position unknown • Suspected preterm labor **Prior to VE** • Review history and most recent ultrasound scan result • Explain procedure and gain verbal consent prior to each examination • Ensure the woman's privacy, dignity and comfort • Ensure bladder is empty • Perform abdominal examination and FHR auscultation • Tap water may be used if cleansing is required before vaginal examination. **During VE** • Maintain privacy, dignity and respect • Keep the woman informed of findings during the examination • Perform VE between contractions • Assessment:	**Strong** **Strong**

- Observe general appearance of perineal and vulval area - Position of cervix—posterior, mid, anterior - Dilatation - Effacement - Consistency—soft, medium, firm - Application of presenting part - Membranes intact/no membranes felt - Liquor—note color, volume, odor - Fetal station: level of presenting part in relation to ischial spines (- 3 to + 3) - Presence of caput and molding - Fetal position and attitude **After VE** • Discuss any potential impact on the birth plan • Auscultate FHR • Document findings	
Laboratory investigation:	
• Hb concentration (if not performed in the past month) • Blood group and Rh typing (if not performed before) – In Rh negative mothers with Rh positive husband, request indirect Coomb's test if available	**GPS**
Admission	
Criteria for admission to labor ward • Admission decisions should take into account: - Maternal and fetal wellbeing - Labor progress (e.g., dilation, contractions) - Complicating risk factor indicating hospital admission. • Criteria of admission to labor ward in low-risk women: - Active stage of labor - ROM • Women with cervical dilatation < 5cm and good uterine contractions should be observed for 2 hours and admit to labor ward if the cervix dilates 1 cm or more.	**Conditional**
General Care and support for normal labor	
• Providers, senior staff and all healthcare professionals should ensure that in all birth settings there is a culture of respect for each woman as an individual undergoing a significant and emotionally intense life experience, so that the woman is in control, is listened to and is cared for with compassion, and that appropriate informed consent is sought.	**GPS**
• Maintain the minimum level of birth intervention compatible with safety.	**Strong**

Eating and drinking	
• Explain to the woman or pregnant person that they should drink during labor when they are thirsty, and that isotonic drinks may be more beneficial than water. Also explain that there is no benefit to drinking any more than normal, and overconsumption may be harmful.	**Strong**
• Inform the woman or pregnant person that they can eat a light diet in established labor if they wish, unless they have received opioids or they develop risk factors that make a caesarean birth more likely.	**Conditional**
Fluid intake and output:	
• Discuss with the woman or pregnant person that: – it is important to drink during labor when thirsty – it is important to regularly empty the bladder – excessive intake of oral or intravenous fluids may be harmful as this can cause hyponatremia (a sodium level of less than 130 mmol/L in a pregnant woman or pregnant person) and lead to maternal and neonatal seizures or death – their midwife will ask about and check up on their fluid intake and output throughout labor – fluid balance monitoring may be advised during labor to reduce the risk of hyponatremia or dehydration	**Strong**
• Monitor and record fluid balance, if: – there are any concerns about fluid intake, for example the woman or pregnant person is drinking too much (also take into account fluid intake before labor care began) – the woman or pregnant person is receiving intravenous fluids – the woman or pregnant person is receiving an oxytocin infusion – there are any concerns about fluid output, for example there is an inability to pass urine, nausea, vomiting or diarrhea there are certain medical conditions, such as hemorrhage or pre-eclampsia	**Strong**
• If there is a positive fluid balance of 1500 ml or more, or there are clinical concerns (for example, signs and symptoms of hyponatremia): – explain to the woman or pregnant person that it is possible they are developing, or have developed, hyponatremia – request an obstetric review – offer a blood test to check their sodium level – advise that they will need to be transferred to an obstetric setting if they are currently in a midwifery-led setting	**Conditional**
• Do not routinely advise oral fluids or give intravenous fluids for the treatment of ketonuria in pregnant women who are not diabetic.	**Strong**
Pain management	
• When women are observed or admitted for pain or fatigue in latent labor, techniques such as education and support, oral hydration, positions of	

comfort, and nonpharmacologic pain management techniques (such as breathing exercises, having a shower or bath, massage or application of warm packs) may be beneficial.	**Conditional**
Hygiene	
• Routine hygiene measures taken by staff caring for women in labor, including standard hand hygiene and single-use non-sterile gloves, are appropriate to reduce cross-contamination between women, babies and healthcare professionals.	**GPS**
Perineal/pubic shaving	
• We recommend against routine perineal/pubic shaving prior to giving vaginal birth.	**Conditional**
Enema on admission	
• We recommend against administration of an enema for reducing the use of labor augmentation.	**Strong**
Return/remain at home	
• If there is no indication for immediate admission, and the woman returns or remains at home, provide information on: – When to return/make contact, including if: ▪ Increased frequency, strength and duration of contractions ▪ Increased pain or discomfort requiring additional support ▪ Vaginal bleeding and//or membrane rupture ▪ Reduced or concern about fetal movements – Plan an agreed time for reassessment at each contact	**Strong**
First stage of labor	
Latent phase:	
• Duration **of the latent stage:** Women should be informed that a standard duration of the latent first stage has not been established	**GPS**
• Assessment **in latent phase:** – Review birth plan and provide individualized support including: ▪ Encourage ongoing resilience and positive self-belief ▪ Rest, hydration, nutrition, mobilization, support ▪ Reassurance	**Strong**
• **Slow progress in latent stage:** – Limited high-quality evidence to provide a contemporary definition – Historically, limits of more than 20 hours (nulliparous women) and more than 14 hours (multiparous women) were applied to identify prolonged latent phase	**Strong**

– Limits not recommended as an indication for intervention when maternal and fetal condition are reassuring – Labor may not naturally accelerate until a cervical dilatation threshold of 5 cm is reached. Therefore, the use of medical interventions to accelerate labor and birth (such as oxytocin augmentation or caesarean section) before this threshold is not recommended, provided fetal and maternal conditions are reassuring	
• **If slow progress is suspected, assess to identify:** – Developing complications – Reassuring maternal and fetal condition – Emotional and physical needs	**Strong**
Active phase of 1st stage	
• **Duration of the active first stage:** The duration of active first stage (from 5 cm until full cervical dilatation) usually does not extend beyond 12 hours in first labors, and usually does not extend beyond 10 hours in subsequent labors.	**GPS**
• **Progress of the first stage of labor:** In active labor, cervical dilatation of 0.5 cm per hour (2 cm in 4 hours) is considered normal	**Strong**
• **Consider all aspects of labor progress including:** – Maternal behavior – Fetal condition – Cervical dilatation and rate of change – Descent and rotation of the fetal head – Strength, duration and frequency of contractions – Parity – Previous labor history – Slowing of progress in the multiparous woman	**Strong**
• We recommend against the use of active management of labor for prevention of delay in labor.	**Conditional**
• Do not routinely use amniotomy and or oxytocin to prevent delayed progress in 1st stage of labor.	**Conditional**
• We recommend against the use of intravenous fluids with the aim of shortening the duration of labor.	**Strong**
• We recommend against the use of oxytocin for prevention of delay in labor in women receiving epidural analgesia.	**Strong**
• We recommend against routine vaginal cleansing with chlorhexidine during labor for the purpose of preventing infectious morbidities.	**Strong**
Ongoing care during active phase of first stage:	
• Digital vaginal examination (VE)	**GPS**

– Minimize VE: VE at intervals of two hours is recommended for routine assessment of active first stage of labor in low-risk women. – Offer additional VE if: ▪ At time of ROM ▪ Suspected second stage	
• Advice the woman to pass urine regularly to avoid full bladder.	**GPS**
• Maternal mobility and position: – There is little evidence that any one position is optimal in labor – Avoid supine position as it is associated with adverse effects including ▪ Supine hypotension ▪ Abnormal FHR	**Strong**
Fetal heart assessment:	
• We recommend against the use of continuous cardiotocography for assessment of fetal well-being in normal labor	**Strong**
• Intermittent fetal heart rate monitoring: Intermittent auscultation of the fetal heart rate with either a Doppler ultrasound device (e.g. Doptone® or SonicAid®) or a Pinard fetal stethoscope is recommended for normal labor. • **Interval:** Auscultate every 15–30 minutes in active first stage of labor, and every 5 minutes in the second stage of labor. • **Duration**: Each auscultation should last for at least 1 minute; if the FHR is not always in the normal range (i.e. 110–160 bpm), auscultation should be prolonged to cover at least three uterine contractions. • **Timing:** Auscultate during a uterine contraction and continue for at least 30 seconds after the contraction. • **Recording:** Record the baseline FHR (as a single counted number in beats per minute) and the presence or absence of accelerations and decelerations.	**Strong**
Partogram	
• Start using partogram when active labor is confirmed for documentation and providing a visual overview of progress. • Record the following observations during the first stage of labor in the partogram: – half-hourly documentation of frequency of contractions – hourly pulse – 4-hourly temperature, blood pressure and respiratory rate as a minimum; in addition to other observations according to situation	**Strong** **Strong**
Maternal and fetal warning signs	

• If any of the warning signs are present or developed during labor, consult a specialist care: – pulse over 120 beats/minute on 2 occasions 15 to 30 minutes apart – a single reading of either raised diastolic blood pressure of 110 mmHg or more or raised systolic blood pressure of 160 mmHg or more – either raised diastolic blood pressure of 90 mmHg or more or raised systolic blood pressure of 140 mmHg or more on 2 consecutive readings taken 15 to 30 minutes apart – a reading of 2+ of protein on urinalysis and a single reading of either – raised diastolic blood pressure (90 mmHg or more) or raised systolic blood pressure (140 mmHg or more) – respiratory rate of less than 9 or more than 21 breaths per minute on 2 occasions 15 to 30 minutes apart – temperature of 38°C or above on a single reading, or 37.5°C or above on 2 consecutive occasions 1 hour apart; for advice on intrapartum antibiotics – fresh red bleeding or blood-stained liquor – the new appearance of meconium – pain reported by the woman that differs from the pain normally associated with contractions – confirmed delay in the first stage of labor – obstetric emergency, including antepartum hemorrhage, cord prolapse, maternal seizure or collapse, or a need for advanced neonatal resuscitation – any non-cephalic presentation, including cord presentation – high (4/5 to 5/5 palpable) or free-floating head in a nulliparous woman – suspected fetal growth restriction or macrosomia – suspected anhydramnios or polyhydramnios – any alarming fetal heart rate pattern	**Strong**
Delayed progress in active first stage (protracted labor)	
• If delayed progress in the established first stage is suspected, assess: – cervical dilatation of less than 2 cm in 4 hours – descent and rotation of the baby's head – strength, duration and frequency of uterine contraction – condition of fetal membranes	**Strong**
• Offer the woman support, hydration, and appropriate and effective pain relief.	**Strong**
Management of delayed/protracted first stage or arrest of labor	

• Discuss the findings and the options available with the woman, and support her decision.	**Strong**
• For women with intact membranes in whom delay in the established first stage of labor is confirmed: – consider amniotomy if membranes are intact – oxytocin if inertia was diagnosed and – repeat vaginal examination 2 hours later.	**GPS**
• If available, offer the woman an epidural analgesia before oxytocin is started or if she requests it later.	**Conditional**
• If oxytocin is used in the first stage of labor, ensure that the time between increments of the dose is no more frequent than every 30 minutes. Increase oxytocin until there are 3 to 4 contractions in 10 minutes.	**Strong**
• Oxytocin must be discontinued immediately if there is abnormality in fetal heart rate is observed.	**Strong**
• Consider restarting oxytocin in the first stage of labor if: – Obstetric review has been carried out and the FHR is no longer abnormal. – Base the dose when restarting on a full clinical assessment, taking into consideration the previous dose.	**Conditional**
• Perform vaginal examination 2 hourly after the oxytocin infusion has led to regular contractions: – If cervical dilatation has increased by less than 2 cm after 4 hours of oxytocin, or there is arrest of labor, further obstetric review is needed by a senior obstetrician to assess whether a caesarean birth is advisable.	**Strong**
Second stage of labor	
• **Assessment of women during the second stage of labor** – Continue with observations of the woman and baby, and assessment of risk as described for the first stage of labor and, but be aware that the frequency of fetal monitoring should increase. – Increase Frequency of observations if clinically indicated.	**Strong**
• **Vaginal examination**. – To assess progress, the vaginal examination should include: ▪ position of the head ▪ descent ▪ caput and molding	**GPS**
• **Fundal pressure** – Application of manual fundal pressure to facilitate childbirth during the second stage of labor is **not recommended**.	**Strong**
• **Techniques for preventing perineal trauma** – For women in the second stage of labor, techniques to reduce perineal trauma and facilitate spontaneous birth (including	**Strong**

perineal massage, warm compresses and a “hands on” guarding of the perineum) are recommended	
Episiotomy policy	
• Routine or liberal use of episiotomy is not recommended for women undergoing spontaneous vaginal birth.	**Strong**
• If an episiotomy is performed, the recommended technique is a mediolateral episiotomy originating at the vaginal fourchette and usually directed to the right side. The angle to the vertical axis should be between 45 and 60 degrees at the time of the episiotomy.	**Strong**
• Perform an episiotomy if there is a clinical need, such as birth with forceps or ventouse or suspected fetal compromise. • Provide tested, **effective analgesia** before carrying out an episiotomy, except in an emergency because of acute fetal compromise.	**Strong**
Shortening of the 2nd stage	
• Delay in active second stage is diagnosed when: – In nulliparous woman (any of): either insufficient flexion/rotation/descent within 1 hour or the second stage duration is > 2 hours. – In multiparous woman (any of): either insufficient flexion/rotation/descent within 30 minutes or the second stage duration is > 1 hour. – Longer durations may be appropriate where maternal and fetal conditions are optimal.	**GPS**
• A specific absolute maximum length of second stage (passive plus active) has not been identified. Rather than rigid time limits, base decision-making on continuing assessment of: – Maternal physical and emotional condition – Fetal condition – Progress of labor – Maternal preferences	**Strong**
• Operative vaginal delivery in second stage of labor by experienced and well-trained physicians should be considered safe, acceptable alternative to cesarean delivery. • Training in, and ongoing maintenance of, practical skills related to operative vaginal delivery should be encouraged.	**Strong**
Third stage of labour	
Management of third stage of labor	
• The use of uterotonics for prevention of PPH during the third stage of labor is recommended for all births.	**Strong**
• **Cord clamping:**	

– Late cord clamping (performed approximately 1 to 3 minutes after birth) is recommended for all births while initiating simultaneous essential newborn care. – Early cord clamping (<1 minute after birth) is not recommended unless the neonate is asphyxiated and needs to be moved immediately for resuscitation.	**Strong** **Strong**
• **Controlled cord traction:** – Consider Controlled cord traction (CCT) as part of active/modified active management of third stage as it may. – Providers employing CCT should only do so after signs of placental separation, and traction should be performed with uterine contraction as these measures reduce the risk of uterine inversion, cord avulsion, and partial detachment of the placenta.	**Strong** **Strong**
Prophylactic Uterotonics:	
• **Oxytocin:** – In most circumstances, oxytocin is the prophylactic uterotonic of choice. – For vaginal birth ▪ If vaginal birth with IV access: Oxytocin 10 IU IV injected slowly over 3–5 minutes is recommended in preference to IM ▪ If vaginal birth without IV access: Oxytocin 10 IU IM – For CS birth: ▪ Oxytocin 5 IU IV over 1–2 minutes ▪ Monitor for hemodynamic impact ▪ Avoid rapid IV bolus administration – If cardiovascular compromise exists (e.g. hypovolemia, shock, cardiac disease), use caution with IV administration.	**Strong**
• **Ergometrine**: – Ergometrine can be given IM or, in life-saving circumstances, as a slow IV injection. – Ergometrine should not be used in patients with essential or gestational hypertension, or in patients on HIV protease inhibitors. – Though undisputedly extremely effective, potential adverse effects limit ergometrine to a second-line agent.	**Conditional** **Strong** **Conditional**
• **Carbetocin**: – Routinely use oxytocin in preference to carbetocin if vaginal birth and cold-chain storage of oxytocin can be guaranteed (e.g. hospital setting). – If vaginal birth and cold-chain storage of uterotonics cannot be guaranteed:	**Conditional**

▪ Carbetocin is an effective alternative uterotonic ▪ IM is preferred route of administration – If CS birth under regional anesthetic: IV carbetocin may be considered as a cost-effective uterotonic. – If CS birth under general anesthetic: Carbetocin is not recommended due to insufficient evidence. – If used: used as a single dose only, not for repeated use	
• **Misoprostol**: – Not recommended if alternative injectable uterotonics are available – Use only if no other injectable uterotonic is available (e.g. due to unexpected birth in low resource setting or if storage conditions for uterotonics are inadequate). – The dose is 600 micrograms orally or sublingual single dose immediately after birth – If in a low resource setting with limited PPH treatment capability, consider use if: ▪ an injectable uterotonic has been administered and ▪ continued bleeding is anticipated and/or blood loss is estimated to be greater than or equal to 350 mL	**Conditional**
Tranexamic Acid (TXA) For Prophylaxis in High-Risk Women	
• Tranexamic acid can be used as a prophylactic agent as an adjunct to uterotonics in patients at **high risk for postpartum hemorrhage.** • Use TXA **within 3 hours of birth** of the baby in a fixed dose of 1 g in 10 mL IV over 10 minutes (100 mg/min i.e. 1 ml /minute)	**Strong**
Prolonged third stage	
• Diagnose a prolonged third stage of labor if it is not completed within 30 minutes of the birth with active management or within 60 minutes of the birth with physiological management	**Strong**
Placenta and membranes examination	
• Perform a thorough examination of the placenta and membranes: – **Placenta:** ▪ General shape and appearance ▪ Calcification or infarctions ▪ Evidence of abruption ▪ Missing cotyledons ▪ Succenturiate lobe/s – **Membranes:** ▪ One amnion and one chorion ▪ Complete or ragged ▪ Presence of vessels – **Cord:**	**Strong**

▪ Cord insertion site ▪ Two arteries and one vein ▪ Velamentous insertion: Vessels noted in membranes	
Immediate Postpartum Risk Management	
• **Uterine massage:** – Sustained uterine massage is not recommended as an intervention to prevent PPH in women who have received prophylactic oxytocin.	**Strong**
• **Uterine tonus assessment:** – Postpartum abdominal uterine tonus assessment for early identification of uterine atony is recommended for all women.	**Strong**
• **Nipple stimulation & breast feeding:** – Nipple stimulation and/or early breastfeeding may increase uterine activity but has not been shown to reduce bleeding or incidence of PPH.	**Strong**
• **Observation for women in the first 2 hours postpartum:** – Vital signs: Respiratory rate, pulse rate, and blood pressure, every 15-30 minutes in the first hour and every 30 minutes in the second hour. – Blood Loss every 15-30 minutes by visualizing the labia and perineum and be alert for slow steady trickle. – Uterine tonus assessment – Temperature every 30 minutes – Urine output: after the first 2 hours • **After the first 2 hours continue as clinically indicated**	**Strong**
• **Women who have had regional analgesia or anesthesia:** – Check that women who have had regional analgesia or anesthesia can perform a straight leg raise by 4 hours after the last anesthetic dose. If not, contact the obstetric anesthetist for urgent review.	**Strong**
• **Antibiotics use with normal labor:**	
– Use according to the local protocols	**GPS**
Episiotomy/1st and 2nd degree perineal tears repair	
• Ensure that tested effective analgesia is in place, using infiltration with up to 20 ml of 1% lidocaine or equivalent	
• Top up the epidural or insert a spinal anesthetic if necessary	
• If the woman reports inadequate pain relief at any point, manage immediately with pharmacological and/or non-pharmacological measures	
• In episiotomy and first/second degrees tears, the wound should be sutured in order to improve healing.	
• Suture use a continuous subcuticular technique	

• Undertake perineal repair using a continuous non-locked suturing technique for the vaginal wall and muscle layer.	**Strong**
• Use an absorbable synthetic suture material to suture the perineum.	
• Offer rectal non-steroidal anti-inflammatory drugs routinely after perineal repair of first- and second-degree trauma provided these drugs are not contraindicated.	
• Ensure that suture material has not been accidentally inserted through the rectal mucosa by carrying out a rectal examination after completing the repair	
• After completion of the repair, document an accurate detailed account covering the extent of the trauma, the method of repair and the materials used	
• Give the woman information about the extent of the trauma, pain relief, diet, hygiene and the importance of learning to do pelvic floor exercises, what to expect as they recover, and where and when to seek advice or psychological support if needed.	
Postnatal discharge following uncomplicated vaginal birth	
• After an uncomplicated vaginal birth in a health care facility, we advise that healthy mothers and newborns receive care in the facility for 12 - 24 hours after birth.	**GPS**
• **Physiological care** – Respond to requests for pain management – Consider personal hygiene needs – Observe emotional and psychological response to labor and birth – Observe response towards the baby and encourage breast feeding – Venous thromboembolism (VTE) risk re-assessment – Iron supplementation is advised.	**GPS**
• **Rh D negative blood group** – Test the baby's Rh status – We recommend Rh D immunoglobulin if maternal indirect Coomb's test is negative	**Strong**
Intrapartum analgesia	
• **Non-pharmacological pain-relieving strategies** – Advise women that breathing exercises, and having a shower or bath, may reduce pain during the latent first stage of labor.	**Conditional**
• **Pharmacological analgesia**	
– **Opioid analgesia for pain relief** ▪ Parenteral opioids, such as fentanyl, diamorphine and pethidine, are options for healthy pregnant women requesting pain relief during labor, depending on a woman's preferences and availability.	**Conditional**

▪ Inform the woman that these drugs will provide limited pain relief during labor and may have side effects for both her (for example, drowsiness, nausea and vomiting) and her baby (for example, short-term respiratory depression and drowsiness, which may last several days and may make it more difficult to breastfeed).	
▪ It is not advisable to give opioids if delivery is expected with 3 hours	**GPS**
▪ If an intravenous or intramuscular opioid is used, also administer an antiemetic.	**Conditional**
– **Antispasmodic agents** ▪ The use of antispasmodic agents for prevention of delay in labor is not recommended.	**Conditional**
• **Epidural analgesia for pain relief**	
– Epidural analgesia may be offered for healthy pregnant women requesting pain relief during labor, depending on a woman's preferences and availability.	**Conditional**
– **Obstetric care and observations for women with epidural analgesia** ▪ Care and observations for women with epidural analgesia should be jointly managed with the anesthetist. ▪ Insert urinary catheter. ▪ Perform continuous cardiotocography for at least 30 minutes during establishment of epidural analgesia and after administration of each further bolus of 10 ml or more. ▪ On confirmation of full cervical dilatation in a woman with epidural analgesia, unless the woman has an urge to push or the baby's head is visible, pushing may be delayed by 1 hour for multiparous women and up to 2 hours for nulliparous women, after which actively encourage her to push during contractions. ▪ Do not routinely use oxytocin in the second stage of labor for women with epidural analgesia. ▪ Continue epidural analgesia until after completion of the third stage of labor and any necessary perineal repair.	**Strong**

Introduction

This guideline aims to promote and encourage the physiologic spontaneous normal labor in low-risk women at term. It also aims to encourage both practitioners and pregnant women through combined informed decision to promote and grow interest in normal labor through the proper diagnosis and management and use of minimal interventions during labor.

The main reasons for developing this guideline are: decreasing both maternal, fetal and neonatal morbidity and mortality, and decreasing Cesarean section rate on national level.

Complications during labor are suggested to be responsible for one third of maternal deaths, half of stillbirths and a quarter of neonatal deaths with majority of these deaths occurring in low-resource settings.

According to the data by the Central Agency for Public Mobilization and Statistics (CAPMAS) published in Egypt Family Health Survey (EFHS, 2021), Cesarean section births increased to 72% in 2021, up from 52% in 2014.

Scope and Purpose

This is an adapted evidence-based clinical practice guideline for the conduct of normal labor.

The objectives of this guideline are:

- To provide guidance for the healthcare providers involved in the conduct of normal labor.
- To optimize the care provided to women and their newborns during the process of normal labor and delivery, in accordance with evidence-based best practices.

- Target Audience

This guideline targets; healthcare professionals working as Obstetricians & Gynecologists, nurses, physicians working at emergency units, policy makers, hospital managers, and other stakeholders to apply the best practice and afford the most appropriate tools for women who presented in labor.

- Methodology

A comprehensive search for guidelines was done to identify the most relevant ones to consider for adaptation. The inclusion/exclusion criteria that were followed in the search and retrieval of guidelines to be adapted are:

We select guidelines only if they are:

- Evidence-based guidelines
- National and/or international guidelines
- Guidelines published from 2016 to 2025

- Peer reviewed publications
- Guidelines written in English language

We Exclude guidelines that are:

- Written by a single author not on behalf of an organization as guideline to be valid and comprehensive ideally requires multidisciplinary input.
- Published without references as the panel needs to know whether a thorough literature review was conducted and whether the current evidence was used in the preparation of the recommendations.

The following characteristics of the retrieved guidelines were summarized in a table:

- Developing organization/authors
- Date of publication, posting, and release
- Country/language of publication
- Dates of the search used by the source guideline developers

All retrieved Guidelines were screened and appraised using AGREE II instrument (www.agreetrust.org) by at least three members. The panel decided on a cut-off point or ranked the guidelines (any guideline scoring above 50% on the rigor dimension was retained).

Guidelines used in the adaptation process:

1. Intrapartum care for healthy women and babies (NICE, 2022) National Institute of Health and Care Excellence guideline [NG235] Published September 2023 last updated November 2025.[(1)]
2. Queensland Clinical Guidelines (2022). Normal Birth. Published Dec 2022. Amendment date: July 2023. [(2)]
3. WHO recommendations 2018: intrapartum care for a positive childbirth experience.[(3)]
4. ACOG CLINICAL PRACTICE GUIDLINE (2024): First and Second Stage Management.[(4)]
5. ACOG COMMITTEE OPINION 2019 (Number 766): Approaches to Limit Intervention During Labor and Birth.[(5)]
6. Queensland Clinical Guidelines (2023). Intrapartum pain management Published Feb 2023.[(6)]

Evidence assessment

According to WHO Handbook for Guidelines, we used the GRADE (Grading of Recommendations, Assessment, Development and Evaluation) approach to assess the quality of a body of evidence, develop and report recommendations. GRADE methods are used by WHO because these represent internationally agreed standards for making transparent recommendations. Detailed GRADE information is available on the following sites:

- GRADE working group: http://www.gradeworkingroup.org
- GRADE online training modules: http://cebgrade.mcmaster.ca/

- GRADE profile software: http://ims.cochrane.org/revman/gradepro

Table 1: Quality and Significance of the four levels of evidence in GRADE:

Quality	Definition	Implications
High	The guideline development group is very confident that the true effect lies close to that of the estimate of the effect	Further research is very unlikely to change confidence in the estimate of effect
Moderate	The guideline development group is moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different	Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate
Low	Confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the true effect	Further research is very likely to have an important impact on confidence in the estimate of effect and is unlikely to change the estimate
Very low	The group has very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of the effect	Any estimate of effect is very uncertain

Table 2; Factors that determine How to upgrade or downgrade the quality of evidence

Downgrade in presence of	Upgrade in presence of
Study limitations – 1 Serious limitations – 2 Very serious limitations	**Dose-response gradient** + 1 Evidence of a dose-response gradient
Consistency – 1 Important inconsistency	**Direction of plausible bias** + 1 All plausible confounders would have reduced the effect
Directness – 1 Some uncertainty – 2 Major uncertainty	**Magnitude of the effect** + 1 Strong, no plausible confounders, consistent and direct evidence + 2 Very strong, no major threats to validity and direct evidence
Precision – 1 Imprecise data	
Reporting bias – 1 High probability of reporting bias	

The strength of recommendations

The strength of a recommendation communicates the importance of adherence to the recommendation.

Strong recommendations: The GDG found that the desirable effects of adherence to the recommendation outweigh the undesirable effects. This means that in most situations the recommendation can be adopted.

Conditional recommendations: This means that the GDG found that there is:

- Greater uncertainty about the strength of evidence, or
- The recommendation may account for a greater variety in patient values and preferences, or
- The resource use makes the intervention suitable for some, but not for other locations.

Conditional recommendations **are still the best available evidence to date and** it can be adopted if it meets the conditions mentioned with it.

Good Practice Statement: Statements based on opinion of respected authorities, e.g. the RCOG, ACOG, and the guidelines development group.

Recommendations

1. Definition

Normal labor is labor that:

- Occurs between 37+0 and 42+0 weeks completed weeks
- Spontaneous onset
- Singleton gestation
- Vertex presentation
- Normal labor progress
- Spontaneous vaginal birth
- No maternal or fetal complications or risk factors. [1-3]

Justification

The benefits of normal labor and birth for the woman and baby include:

- Enhances labor effectiveness
- Promotes fetal readiness for birth
- Protects the baby from reduced oxygen during labor
- Improves physiological response to labor stress and pain
- Promotes maternal and newborn transitions
- Helps to minimize maternal bleeding after birth
- Promotes optimal mother-infant attachment [1, 2, 7]

2. Initial maternal assessment

2.1 History taking

2.1.1 Review history, pregnancy notes and screening results including:

- Gestational age.
- Past history (medical, obstetric, gynecological, surgical, social, family).
- Medications, allergies.
- Pregnancy complications.
- Investigation results (including placental location).

2.1.2 Ask her about the length, strength and frequency of her contractions.

2.1.3 Ask about fetal movements in the last 24 hours.

2.1.4 Ask for vaginal losses.

2.1.5 Review if there are any antenatal or intrapartum risk factors for fetal hypoxia.

2.1.6 Review ER visit history and clinical circumstances at each visit.

Assess emotional and psychological needs. **[1, 2]**

(Strong recommendation, moderate-quality evidence)

2.2 General Examination

2.2.1 Temperature, pulse, respiratory rate, blood pressure (BP), and urinalysis

2.2.2 Assess nutrition and hydration status and general appearance.[1, 2]

(Strong recommendation, moderate-quality evidence)

2.3 Abdominal examination

2.3.1 Observation, and palpation including:

- fundal height, fetal lie, attitude, presentation, position, engagement/descent

2.3.2 Record time of maternal account of regular, painful contractions

- Assess strength, frequency, duration and resting tone for 10 minutes.[1, 2]

(Strong recommendation, moderate-quality evidence)

Justification

An assessment of early labor by maternity care providers should review history, pregnancy notes and screening results. Accurate and consistent triage and information sharing supports and empowers remaining at home during the latent phase of labor. Ascertain reason for presentation or contact, assess emotional and psychological needs, perform general, abdominal examinations and discuss preferences for labor and birth.[1, 2, 8]

2.4 Auscultation of fetal heart rate

2.4.1 Intermittent auscultation using either a Pinard stethoscope or a handheld Doppler ultrasound device (e.g. Doptone® or SonicAid®).

2.4.2 Auscultate the fetal heart rate for a minimum of 1 minute immediately after a contraction; palpate the woman's pulse to differentiate between the heartbeats of the woman and the baby

2.4.3 Differentiate between maternal and fetal heartbeat.[2]

(Strong recommendation, moderate-quality evidence)

Justification

Several societies recommend intermittent auscultation to women in labor at low risk of complications.[9-11] The evidence was derived from a Cochrane systematic review comparing continuous CTG versus intermittent auscultation (IA) for assessment of fetal well-being during labor.[12] For the purposes of this guideline, only evidence derived from the low-risk subgroup of the review was included. Three trials were individual RCTs and one was a quasi-RCT (the USA study), which alternated interventions for each month of the trial. The latter study was assessed as being at a high risk of bias. The method of IA varied across trials to include auscultation using a Pinard fetal stethoscope and/or Doppler ultrasound device.[12]

2.5 Vaginal examination

Indication of VE

2.5.1 if there is uncertainty about whether the woman is in established labor, a vaginal examination may be helpful after a period of assessment, but is not always necessary

2.5.2 if the woman appears to be in established labor, offer a vaginal examination.

2.5.3 If spontaneous rupture of membranes (SROM) suspected, consider a dry sterile speculum examination.

2.5.4 Routine clinical pelvimetry on admission in labor is not recommended for healthy pregnant women.

2.5.5 Assess and record vaginal loss

- Discharge—note color, odor, consistency
- Blood—note color, volume
- Liquor—note color, volume, odor, consistency
- Presence of meconium

2.5.6 Document the presence or absence of meconium.

- If meconium is present, consider the character of the meconium.
- Meconium may increase the risk to the baby means that: Continuous CTG monitoring may be advised
- Healthcare professionals trained in advanced neonatal life support are needed as soon as the baby is born.

Contraindication to VE

- Antepartum hemorrhage
- Ruptured membranes and not in labor
- Placenta previa
- Placental position unknown
- Suspected preterm labor

Prior to VE

2.5.7 Review history and most recent ultrasound scan result

2.5.8 Explain procedure and gain verbal consent prior to each examination

2.5.9 Ensure the woman's privacy, dignity and comfort

Ensure bladder is empty

2.5.10 Perform abdominal examination and FHR auscultation

2.5.11 Tap water may be used if cleansing is required before vaginal examination.

During VE

2.5.12 Maintain privacy, dignity and respect

2.5.13 Keep the woman informed of findings during the examination

2.5.14 Perform VE between contractions

2.5.15 Assessment:

- Observe general appearance of perineal and vulval area
- Position of cervix—posterior, mid, anterior
- Dilatation
- Effacement
- Consistency—soft, medium, firm
- Application of presenting part
- Membranes intact/no membranes felt
- Liquor—note color, volume, odor
- Fetal station: level of presenting part in relation to ischial spines (- 3 to + 3)
- Presence of caput and molding
- Fetal position and attitude

After VE

2.5.16 Discuss any potential impact on the birth plan

2.5.17 Auscultate FHR

2.5.18 Document findings.[1-3]

(Strong recommendation, moderate-quality evidence)

Justification

The committee were aware that the guideline recommended a vaginal examination be carried out at a number of different timepoints but did not specify what should be assessed as part of this vaginal examination. Based on their knowledge and experience, the committee therefore added a recommendation with these details. Where membranes are intact, there is no evidence to support or reject the use of routine VE in labor to improve outcomes for women and babies.[1, 3, 13]

3. Laboratory investigation

3.1.1 Hb concentration (if not performed in the past month).

3.1.2 Blood group and Rh typing (if not performed before).

3.1.2.1 In Rh negative mothers with Rh positive husband, request indirect Coomb's test if available.

(GPS, Consensus-based)

4. Admission

4.1 Criteria for admission to labor ward

4.1.1 Admission decisions should take into account:

- Maternal and fetal wellbeing
- Labor progress (e.g., dilation, contractions)
- Complicating risk factor indicating hospital admission.

4.1.2 Criteria of admission to labor ward in low-risk women:

- Active stage of labor
- ROM

4.1.3 Women with cervical dilatation < 5cm and good uterine contractions should be observed for 2 hours and admit to labor ward if the cervix dilates 1 cm or more.[1, 2, 5]

(Conditional recommendation, moderate-quality evidence)

Justification

Observational studies have found that admission in the latent phase of labor is associated with more arrests of labor and cesarean births in the active phase and with a greater use of oxytocin, intrauterine pressure catheters, and antibiotics for intrapartum fever.[14-16] However, these studies were unable to determine whether these outcomes reflected interventions associated with earlier and longer exposure to the hospital environment or a propensity for dysfunctional labor among women who present for care during the latent phase. A randomized controlled trial that compared admission at initial presentation to the labor unit (immediate admission) versus admission when in active labor (delayed admission) found that those allocated to the delayed admission group had lower rates of epidural use and augmentation of labor, had greater satisfaction, and spent less time in the labor and delivery unit. Although there were no significant differences between study groups in operative vaginal or cesarean births or new- born outcomes, the study was underpowered to assess these outcomes.[17]

Importantly, recent data from the Consortium for Safe Labor support updated definitions for latent and active labor. In contrast to the prior suggested threshold of 4 cm, the onset of active labor for many women may not occur until 5–6 cm.[18-20] These data suggest that expectant management is reasonable for women at 4–6 cm dilatation and considered to be in latent labor, as long as maternal and fetal status are reassuring. For women who are in latent labor and are not admitted to the labor unit, a process of shared decision making is recommended to create a plan for self-care activities and coping techniques. An agreed-upon time for reassessment should be determined at the time of each contact. Care of women in latent labor may be enhanced by

having an alternate unit where such women can rest and be offered support techniques before admission to labor and delivery.

Admission during the latent phase of labor may be necessary for a variety of reasons, including pain management or maternal fatigue.[21, 22] When women are observed or admitted for pain or fatigue in latent labor, techniques such as education and support, oral hydration, positions of comfort, and nonpharmacologic pain management techniques such as massage or water immersion may be beneficial.[23, 24]

4.2 General Care and support for normal labor

4.2.1 Providers, senior staff and all healthcare professionals should ensure that in all birth settings there is a culture of respect for each woman as an individual undergoing a significant and emotionally intense life experience, so that the woman is in control, is listened to and is cared for with compassion, and that appropriate informed consent is sought.[1]

(GPS, Consensus- based)

4.2.2 Maintain the minimum level of birth intervention compatible with safety.[2]

(Strong recommendation, Low-moderate quality evidence)

Justification

Provision of respectful maternity care (RMC) is in accordance with a human rights-based approach to reducing maternal morbidity and mortality. RMC could improve women's experience of labor and childbirth and address health inequalities. There is limited evidence on the effectiveness of interventions to promote RMC or to reduce mistreatment of women during labor and childbirth. Given the complex drivers of mistreatment during facility-based childbirth, reducing mistreatment and improving women's experience of care requires interventions at the interpersonal level between a woman and her health care providers, as well as at the level of the health care facility and the health system. Interventions should aim to ensure a respectful and dignified working environment for those providing care, acknowledging that staff may also experience disrespect and abuse in the workplace and/or violence at home or in the community.[3]

Evidence on the effects of respectful maternity care (RMC) interventions on birth outcomes was derived from a systematic review of five studies.[25] Types of components included in the RMC interventions were: training in values and attitudes transformation; training I interpersonal communication skills; setting up quality improvement teams; monitoring of disrespect and abuse; staff mentorship; improving privacy in wards (e.g. with curtains or partitions between beds); maternity open days; community workshops; mediation/alternative dispute resolution; counselling of community members who have experienced disrespect and abuse; providing a method for submitting complaints; and educating women on their rights.

Data were not pooled due to heterogeneity across studies in study design and the definitions and reporting of outcomes. Data were relatively sparse and all of the studies were at

unclear or high risk of bias. Therefore, the level of certainty of the evidence was downgraded for risk of bias for all outcomes.[3, 25]

4.3 Eating and drinking

Explain to the woman or pregnant person that they should drink during labor when they are thirsty, and that isotonic drinks may be more beneficial than water. Also explain that there is no benefit to drinking any more than normal, and over consumption may be harmful.[1]

(Strong recommendation, moderate quality evidence)

4.3.1 Inform the woman or pregnant person that they can eat a light diet in established labor if they wish, unless they have received opioids or they develop risk factors that make a caesarean birth more likely.[1]

(Conditional recommendation, low quality evidence)

Justification

For low-risk women, restricting oral intake has shown no improvement on maternal or fetal birth outcomes,[26] therefore, it is recommended to support woman to eat and drink as desired, offer frequent sips of water. Intrapartum isotonic and carbohydrate drinks are not any more beneficial than drinking water. Oral carbohydrate supplements do not alter labor outcomes.[27]

4.4 Fluid intake and output

4.4.1 Discuss with the woman or pregnant person that:

- it is important to drink during labor when thirsty
- it is important to regularly empty the bladder
- excessive intake of oral or intravenous fluids may be harmful as this can cause hyponatremia (a sodium level of less than 130 mmol/L in a pregnant woman or pregnant person) and lead to maternal and neonatal seizures or death
- their midwife will ask about and check up on their fluid intake and output throughout labor
- fluid balance monitoring may be advised during labor to reduce the risk of hyponatremia or dehydration.[1]

(Strong recommendation, low-quality evidence)

Justification

Natural changes in water and sodium balance in the body during pregnancy mean that normal sodium levels in the blood during pregnancy (130 to 140 mmol/L) are slightly lower than the level in the general population (135 to 145 mmol/L). Women and people in labor are at higher risk of hyponatremia (sodium less than 130 mmol/L) because of physiological changes in pregnancy and in labor, including a lower blood osmolality, a lower sodium level and the antidiuretic effect of both endogenous and exogenous oxytocin in labor. The liberal use of intravenous fluids and excessive oral intake further increases the risk. Maternal hyponatremia impacts the unborn baby because water crosses the placenta freely, which can lead to hyponatremia in the newborn. Mild hyponatremia can be asymptomatic, but more severe

hyponatremia can cause maternal or neonatal neurological morbidity, including seizures, coma and death.[1]

4.4.2 Monitor and record fluid balance, if:

- there are any concerns about fluid intake, for example the woman or pregnant person is drinking too much (also take into account fluid intake before labor care began)
- the woman or pregnant person is receiving intravenous fluids
- the woman or pregnant person is receiving an oxytocin infusion
- there are any concerns about fluid output, for example there is an inability to pass urine, nausea, vomiting or diarrhea
- there are certain medical conditions, such as hemorrhage or pre-eclampsia.[1]

(Strong recommendation, low-quality evidence)

Justification

The best way to prevent hyponatremia is to monitor fluid balance by recording the volume of fluid intake (oral and intravenous) and output (primarily urine) in a chart. Fluid balance monitoring may also be important for other clinical reasons, including to prevent dehydration if the person is vomiting or in the context of pre-eclampsia, for example. The committee agreed that the benefits of monitoring fluid balance in all labors needs to be balanced with the implications of it in terms of, for example, midwife time and the birth experience of the woman or pregnant person. The committee discussed that, as standard practice, the midwife would keep an eye on the woman's or pregnant person's fluid intake and output and if there were any concerns or risks, this would prompt a formal fluid balance monitoring. So, the committee did not recommend fluid balance monitoring in all labors as it may not always be clinically necessary, but based on their expertise, they recommended indicators for when it should be done. The committee agreed that if healthcare professionals have any concerns about the person's fluid intake or output, fluid balance monitoring should be carried out.[1]

4.4.3 If there is a positive fluid balance of 1500 ml or more, or there are clinical concerns (for example, signs and symptoms of hyponatremia):

- explain to the woman or pregnant person that it is possible they are developing, or have developed, hyponatremia
- request an obstetric review
- offer a blood test to check their sodium level

(Conditional recommendation, low-quality evidence)

4.4.4 Do not routinely advise oral fluids or give intravenous fluids for the treatment of ketonuria in pregnant women who are not diabetic.[1]

(Strong recommendation, low-quality evidence)

Justification

The committee agreed that a positive fluid balance of 1500 ml is a reasonable cut-off for prompting an obstetric review and a blood test to check for sodium levels. These should also happen when there are clinical concerns, such as signs and symptoms of hyponatremia. For women and pregnant people giving birth in a midwifery-led setting, this will mean transferring to an obstetric unit. The committee agreed that administering intravenous fluids or advising oral fluid intake to treat ketosis in women and people in labor who are not diabetic was common practice, but often unnecessary and potentially harmful because of the increased risk of hyponatremia.[1]

The committee did not make recommendations about how to manage hyponatremia and instead advised the use of local protocols. However, they emphasized the importance of informing the consultant obstetrician, consultant anesthetist and the neonatal team so that appropriate oversight and care plans are in place. The urgency of this depends on severity of hyponatremia demonstrated by symptoms or blood sodium level.[1]

The recommendations will improve awareness of the risk of excessive fluid intake in labor, and the subsequent risk of hyponatremia. This will in some cases lead to a change in practice with the increased use of fluid balance monitoring in labor. Increased use of fluid balance monitoring will have a small impact on midwife's time and there may be a small increase in need for blood tests and transfers to obstetric units, but the benefits of preventing adverse outcomes from hyponatremia should outweigh this. The recommendations are unlikely to have any significant resource impact.[1]

4.5 Pain management:

4.5.1 When women are observed or admitted for pain or fatigue in latent labor, techniques such as education and support, oral hydration, positions of comfort, and nonpharmacologic pain management techniques (such as breathing exercises, having a shower or bath, massage or application of warm packs) may be beneficial.[1, 3, 5]

(Conditional recommendation, low-quality evidence)

Justification

Findings from a review of qualitative studies looking at what matters to women during intrapartum care[28] suggest that most women, especially those giving birth for the first time, are apprehensive about childbirth (high confidence in the evidence), and in certain contexts and/or situations may welcome interventions that provide relief from pain (low confidence in the evidence). When interventions are being considered, women would like to be informed about the nature of the interventions and, where possible, given a choice (high confidence in the evidence).

In a separate review of qualitative studies related to labor pain coping techniques,[29] women valued massage techniques as a form of pain relief when these techniques enabled them to relax and feel calm, and to retain control over childbirth (low confidence in the evidence). Benefits to women's overall well-being, such as feeling safe, reassured and less anxious, were also reported (low confidence in the evidence). However, while some women found that massage

enabled them to effectively work with labor pain (low confidence in the evidence), others found it to be ineffective (very low confidence in the evidence).

4.6 Hygiene

4.6.1 Routine hygiene measures taken by staff caring for women in labor, including standard hand hygiene and single-use non-sterile gloves, are appropriate to reduce cross-contamination between women, babies and healthcare professionals.[1]

(GPS, consensus based)

Justification

Selection of personal protective equipment for healthcare professionals must be based on an assessment of the risk of exposure to blood and/or bodily fluids, non-intact skin or mucous membranes. Standard infection control procedures to prevent transmission of recognized and unrecognized infections must be followed.[1]

4.7 Perineal/pubic shaving

4.7.1 We recommend against routine perineal/pubic shaving prior to giving vaginal birth.

(Conditional recommendation, very low-quality evidence)

Justification

This recommendation applies to all hair shavings around the female external genital area within the context of vaginal birth. It does not apply to women being prepared for caesarean section. The decision regarding perineal/pubic shaving should be left to the woman and not her health care giver. In situations where a woman chooses to have perineal/pubic shaving prior to birth, she could be advised to shave wherever, and by whomever she is most comfortable with (e.g. at home shortly before the time of labor and childbirth).[30]

Evidence on routine perineal/pubic shaving before childbirth for the prevention of maternal and neonatal infectious morbidities was extracted from a Cochrane systematic review of three randomized trials involving 1039 women.[31] The trials were conducted in hospitals in the USA (Baltimore, Dallas) and Thailand (Bangkok). All trials included women admitted to hospital prior to giving birth. The trials compared perineal shaving versus no perineal shaving (which included clipping or cutting of perineal hair). In two trials (involving 650 women), skin preparation was performed in both intervention and control groups by scrubbing the external genitalia and inner thighs with soap and water or povidone iodine spray; or with 4% chlorhexidine and rinsing with 1:100 savlon solution.[31]

There is no evidence of any clinical benefit of routine perineal (or pubic) shaving before childbirth, although the quality of evidence is very low. Potential complications of perineal shaving, such as irritation and redness of the perineum, multiple superficial scratches from the razor, vulval itching and burning sensation, are not clinically serious but can be discomforting to women. Non-clinical outcomes that are considered very important to women such as embarrassment during the procedure and discomfort during hair regrowth were not reported by

any of the studies. In the absence of any clinical benefits, it is reasonable to conclude that perineal shaving has a higher potential of leading to undesirable consequences for women.[30]

4.8 Enema on admission

4.8.1 We recommend against administration of an enema for reducing the use of labor augmentation.[3]

(Strong recommendation, very low-quality evidence)

Justification

Evidence was drawn from a Cochrane systematic review of four trials (almost 2000 women),[32] although for most of the outcomes reported, data were available from only one or two trials. Few critical and important maternal and infant outcomes were reported and overall, there were no significant differences between groups. Enema versus no enema: maternal outcomes.

Two trials (1179 women) reported on the total duration of labor; no statistically significant difference was observed in the duration of labor (MD 28.04 min, 95% CI –131.01 to 187.10) but there was a high level of heterogeneity between the findings of the two trials. There was also no observed difference between groups regarding the duration of the second stage of labor (MD 5.2 min, 95% CI –2.56 to 12.96). No significant differences were observed in the rates of second- or third-degree perineal trauma (RR 0.68, 95% CI 0.39 to 1.21).[32]

Intrapartum infection was marginally increased among women who received routine enema (RR 4.62, 95% CI 1.03 to 20.68) but women requiring systemic antibiotics following the birth were similar between the two comparison groups (RR 1.16, 95% CI 0.73 to 1.84; one trial, 428 women). One trial (1027 women) reported women's level of satisfaction with childbirth, the mean scores were identical in the two groups (MD 0.00, 95% CI –0.10 to 0.10).[32]

The review reported very little information on infant outcomes. There was no significant difference in the rate of infants with low Apgar scores at five minutes (RR 1.31, 95% CI 0.57 to 3.06). Rates of neonatal infection (variously defined) were similar between the groups (RR 0.61, 95% CI 0.24 to 1.52).[33]

4.9 Return/remain at home

4.9.1 If there is no indication for immediate admission, and the woman returns or remains at home, provide information on:

- When to return/make contact, including if:
  Increased frequency, strength and duration of contractions
  Increased pain or discomfort requiring additional support
  Vaginal bleeding and/or membrane rupture
  Reduced or concern about fetal movements
- Plan an agreed time for reassessment at each contact.[1, 2]

(Strong recommendation, moderate-quality evidence)

Justification

The evidence was derived from a Cochrane systematic review that included pregnant women without risk factors in early labor.[34] Only one trial conducted in the Canada, involving 209 nulliparous pregnant women, was directly relevant to this guideline question; the evidence from this trial is described below.[17]

In this trial, after ascertaining that the women were not in active labor (defined in the study as the presence of regular, painful contractions and cervical dilatation greater than 3 cm), the women in the intervention group were given support, encouragement and advice, and instructed to walk around outside the facility or return home until labor became more active, with instructions on when to return. If it was not clear whether a woman in the intervention group was in active labor or not, she was asked to remain in the assessment area for several hours, where armchairs and magazines were available to her and her partner, until re-assessment. The intervention group was compared with a control group of women who were admitted directly to labor ward after the initial assessment.

The review found that these interventions have little or no effect on childbirth outcomes, including caesarean section, instrumental vaginal birth, oxytocin augmentation, epidural analgesia, serious maternal morbidity, Apgar scores less than 7 at 5 minutes, and perinatal death. However, low-certainty evidence from the review suggests that maternal satisfaction may be increased with the home assessment and support intervention.[34]

5. First stage of labor

5.1 Latent phase

5.1.1 Duration of the latent stage:

5.1.1.1 Women should be informed that a standard duration of the latent first stage has not been established.[3]

(GPS, consensus-based)

5.1.2 Assessment in latent phase:

5.1.2.1 Review birth plan and provide individualized support including:

- Encourage ongoing resilience and positive self-belief
- Rest, hydration, nutrition, mobilization, support
- Reassurance.[2]

(Strong recommendation, moderate-quality evidence)

Justification

Health care professionals should advise healthy pregnant women that the duration of labor is highly variable and depends on their individual physiological process and pregnancy characteristics.

Evidence was derived from a systematic review of 37 studies evaluating the duration of spontaneous labor in women without risk factors for complications.[35] The studies were

published between 1960 and 2016 in 17 low-, middle- and high-income countries (China, Colombia, Croatia, Egypt, Finland, Germany, Israel, Japan, Korea, Myanmar, Nigeria, Norway, Taiwan [China], Uganda, the United Kingdom, the USA and Zambia), and involving over 200 000 women of different ethnic origins and socioeconomic status. Most of the included studies[36] were conducted in tertiary hospitals.

Among nulliparous, very low-certainty evidence from two studies reported a median duration of the latent phase of the first stage of labor of 6.0–7.5 hours without any indication of the percentile distributions. One of these studies reported the latent phase as the period from the onset of regular contractions until the slope of labor record was more than 1.2 cm/hour while the other defined the latent phase as the "duration of labor before presentation" (at hospital). One study reported the latent phase as from admission to hospital until 4 cm cervical dilatation while the other did not provide any reference points.[35, 36]

Among Parous women, very low-certainty evidence from two studies presenting data reported median durations of the latent phase of 4.5 and 5.5 hours. However, no percentile distributions were reported. One of these studies reported the latent phase as the period from the onset of regular contractions until the slope of labor record was more than 1.2 cm/hour while the other defined the latent phase as the "duration of labor before presentation" (at hospital). Very low-certainty evidence from two studies suggests that the mean duration of the latent phase ranges from 2.2 to 5.7 hours and statistical ("maximum") limits were estimated as 5.4–8.7 hours. One of these studies defined the latent phase as the period from hospital admission until 4 cm dilatation.[35, 36]

5.1.3 Slow progress in latent stage:

5.1.3.1 Limited high-quality evidence to provide a contemporary definition

5.1.3.2 Historically, limits of more than 20 hours (nulliparous women) and more than 14 hours (multiparous women) were applied to identify prolonged latent phase

5.1.3.3 Limits not recommended as an indication for intervention when maternal and fetal condition are reassuring

5.1.3.4 Labor may not naturally accelerate until a cervical dilatation threshold of 5 cm is reached. Therefore, the use of medical interventions to accelerate labor and birth (such as oxytocin augmentation or caesarean section) before this threshold is not recommended, provided fetal and maternal conditions are reassuring

5.1.3.5 If slow progress is suspected, assess to identify:

- Developing complications
- Reassuring maternal and fetal condition
- Emotional and physical needs.[2, 3]

(Strong recommendation, moderate-quality evidence)

Justification

The GDG emphasized that the decision to intervene when the first stage of labor appears to be prolonged must not be taken on the basis of duration alone. Health care professionals should support pregnant women with spontaneous labor onset to experience labor and childbirth according to each individual woman's natural reproductive process without interventions to shorten the duration of labor, provided the condition of the mother and baby is reassuring, there is progressive cervical dilatation, and the expected duration of labor is within the recommended limits.[3]

Women with suspected slow labor progress should be carefully evaluated to exclude developing complications (e.g. cephalo-pelvic disproportion) and to determine whether their emotional, psychological and physical needs in labor are being met. The preset lines on the cervicograph are only one element of the existing WHO partograph. Health care professionals should continue to plot cervical dilatation versus time on the cervicograph as well as other partograph parameters (including fetal heart rate, caput succedaneum, moulding, status of amniotic fluid, fetal descent, maternal temperature, blood pressure and urinary output) to monitor the well-being of the woman and her baby and identify risks for adverse birth outcomes. In health care facilities where interventions such as augmentation and caesarean section cannot be performed and where referral-level facilities are difficult to reach, the alert line could still be used for triaging women who may require additional care.[3]

5.2 Active phase of 1st stage

5.2.1 Duration of the active first stage: the duration of active first stage (from 5 cm until full cervical dilatation) usually does not extend beyond 12 hours in first labors, and usually does not extend beyond 10 hours in subsequent labors.

(GPS, consensus based)

Justification

Among nulliparous active phase, moderate certainty evidence from two studies suggests that the median duration of the active phase when the starting reference point was 4 cm was 3.7–5.9 hours (with 95th percentile thresholds of 14.5–16.7 hours). When the starting reference point was 5 cm, the median duration was 3.8–4.3 hours (with 95th percentile thresholds of 11.3–12.7 hours). The only study reporting 6 cm as the starting reference point reported the median duration of the active phase as 2.9 hours and the 95th percentile duration as 9.5 hours. For studies reporting means, moderate-certainty evidence suggests that the mean duration of labor progressing from 4 to 10 cm dilatation was 3.1–8.1 hours, with statistical limits of 7.1–19.4 hours. One study reported a mean duration of 4.7 hours and statistical limits of 9.9 hours for the active phase with a starting reference point of 3 cm. However, no study reporting a mean duration of the active phase with a starting reference point of 5 or 6 cm was included in the review.[35, 36]

Among parous active phase, moderate-certainty evidence from two studies suggests that the median duration of the active phase for women with parity of 1 and parity of more than 1, with onset defined as 4 cm, was 2.2–4.7 hours, with a range of 13.0–14.2 hours for 95th

percentile thresholds. One study presenting data separately for women with parity of 1 and parity of more than 1, with reference points for active phase starting from 5 cm, reported median durations of 3.4 and 3.1 hours, and 95th percentile thresholds of 10.1 and 10.8 hours, respectively. The same study reported median durations of 2.2 and 2.4 hours and 95th percentile thresholds of 7.5 and 7.4 hours, respectively, when the starting reference point for the active phase was 6 cm.[35, 36]

5.2.2 Progress of the first stage of labor: in active labor, cervical dilatation of 0.5 cm per hour (2 cm in 4 hours) is considered normal.[2]

(Strong recommendation, moderate-quality evidence)

5.2.3 Consider all aspects of labor progress including:

- Maternal behavior
- Fetal condition
- Cervical dilatation and rate of change
- Descent and rotation of the fetal head
- Strength, duration and frequency of contractions
- Parity
- Previous labor history
- Slowing of progress in the multiparous woman.[2, 3]

(Strong recommendation, moderate-quality evidence)

Justification

The GDG acknowledged that in hospital settings the use of the alert line and attempts to maintain cervical dilatation progression of 1 cm/hour led to unnecessary interventions due to the perception that labor progress is pathologically slow.[37]

Women with suspected slow labor progress should be carefully evaluated to exclude developing complications (e.g. cephalo-pelvic disproportion) and to determine whether their emotional, psychological and physical needs in labor are being met.

The preset lines on the cervicograph are only one element of the existing WHO partograph. Health care professionals should continue to plot cervical dilatation versus time on the cervicograph as well as other partograph parameters (including fetal heart rate, caput succedaneum, moulding, status of amniotic fluid, fetal descent, maternal temperature, blood pressure and urinary output) to monitor the well-being of the woman and her baby and identify risks for adverse birth outcomes.[3]

In health care facilities where interventions such as augmentation and caesarean section cannot be performed and where referral-level facilities are difficult to reach, the alert line could still be used for triaging women who may require additional care. In this instance, plotting should commence from a cervical dilatation of 5 cm, which signifies the onset of active first stage of labor for most women.[3]

5.2.4 We recommend against the use of active management of labor for prevention of delay in labor.[2, 3]

(Conditional, low-quality evidence)

5.2.5 Do not routinely use amniotomy and or oxytocin to prevent delayed progress in 1st stage of labor.[1]

(Conditional, low-quality evidence)

5.2.6 We recommend against the use of intravenous fluids with the aim of shortening the duration of labor.[3]

(Strong recommendation, low-quality evidence)

5.2.7 We recommend against the use of oxytocin for prevention of delay in labor in women receiving epidural analgesia.[3]

(Strong recommendation, moderate-quality evidence)

5.2.8 We recommend against routine vaginal cleansing with chlorhexidine during labor for the purpose of preventing infectious morbidities.[2, 3]

(Strong recommendation, moderate- quality evidence)

Justification

Application of slow-yet-normal cervical dilatation patterns as the benchmark for managing the first stage of labor might be cost-effective as it has the potential to reduce the use of interventions to accelerate labor and birth (e.g. caesarean section, oxytocin augmentation) and linked interventions (e.g. continuous cardiotocography, pain relief, antibiotics). In certain middle- and high-income country settings where physicians attend to all women in labor, the use of slow-yet-normal dilatation patterns for managing labor is likely to result in increases in health care resource use.[3]

It is likely that facilitating slow-yet-normal labors would lead to increased bed costs for vaginal births due to longer labor ward stays for women. The estimated cost of a facility bed per day varies widely across regions, as shown by the WHO-CHOICE example estimates (2007–2008).[38]

Increases in bed costs associated with longer labors might have less impact on health care costs in LMICs than in HICs, where bed costs form a larger proportion of costs for childbirth services. On the other hand, if the use of oxytocin augmentation is reduced and fewer caesarean sections are performed as a result of facilitation of slow-yet-normal cervical dilatation patterns, the overall bed costs and health care resource use could be reduced due to shorter postnatal stays.[3]

The most common indication for oxytocin augmentation and primary caesarean section is “failure of labor to progress”, based on the expectation that normal labor progression is at least 1 cm/hour during the active phase, which traditionally starts from 4 cm.[39] However, unnecessary

augmentation of labor and caesarean section are highly inequitable interventions as they are unlikely to be promptly received by disadvantaged women even when indicated. Application of slow-yet-normal dilatation patterns to labor management for all women has the potential to reduce inequity that is associated with overmedicalization of childbirth.[3]

Findings from a review of qualitative studies looking at what matters to women during intrapartum care[28] indicate that most women want a normal childbirth with good outcomes for mother and baby, and do not appreciate unnecessary medical interventions, including additional vaginal examinations that the test strategy may warrant (high confidence in the evidence).

5.3 Ongoing care during active phase of first stage

5.3.1 Digital vaginal examination (VE)

5.3.1.1 Minimize VE: VE at intervals of two hours is recommended for routine assessment of active first stage of labor in low-risk women.

5.3.1.2 Offer additional VE if:

- At time of ROM
- Suspected second stage

(GPS, Consensus-based)

5.3.2 Advice the woman to pass urine regularly to avoid full bladder.

(GPS, Consensus-based)

5.3.3 Maternal mobility and position:

5.3.3.1 There is little evidence that any one position is optimal in labor

5.3.3.2 Avoid supine position as it is associated with adverse effects including:

- Supine hypotension
- Abnormal FHR.[3]

(Strong recommendation, low-quality evidence)

Justification

Priority must be given to restricting the frequency and total number of vaginal examinations. This is particularly crucial in situations when there are other risk factors for infection (e.g. prolonged rupture of amniotic membranes and long duration of labor). The GDG acknowledged that the frequency of vaginal examinations is dependent on the context of care and the progress of labor. The group agreed that vaginal examinations at intervals more frequent may be warranted by the condition of the mother or the baby.[3]

Evidence relating to mobility and upright position compared with bed care for women in labor was extracted from a Cochrane systematic review of 25 trials (> 5000 women).[26]

The review included both randomized and quasi-randomized controlled trials. Most of the women recruited into the trials were at full term with no pregnancy complications. About half of

the included trials recruited only nulliparous women and a subgroup analysis by parity was performed. The trials examined two different comparisons: upright and ambulant care versus bed care for women with (seven trials) and without (18 trials) epidural analgesia at the point of randomization.[26]

A very broad range of interventions was considered in this review; upright and ambulant positions ranged from women sitting, kneeling, squatting and walking, through to taking up other positions either on or off the bed. For both comparisons, the quality of the evidence was graded as low or very low for most outcomes, and due to the low event rates for most of the neonatal outcomes many of the effect estimates relating to the condition of the newborn were imprecise.[26]

5.4 Fetal heart assessment

5.4.1 We recommend against the use of continuous cardiotocography for assessment of fetal well-being in normal labor.[1, 3]

(Strong recommendation, moderate-quality evidence)

5.4.2 Intermittent fetal heart rate monitoring: Intermittent auscultation of the fetal heart rate with either a Doppler ultrasound device (e.g. Doptone® or SonicAid®) or a Pinard fetal stethoscope is recommended for normal labor.

5.4.3 Interval: Auscultate every 15–30 minutes in active first stage of labor, and every 5 minutes in the second stage of labor.

5.4.4 Duration: Each auscultation should last for at least 1 minute; if the FHR is not always in the normal range (i.e. 110–160 bpm), auscultation should be prolonged to cover at least three uterine contractions.

5.4.5 Timing: Auscultate during a uterine contraction and continue for at least 30 seconds after the contraction.

5.4.6 Recording: Record the baseline FHR (as a single counted number in beats per minute) and the presence or absence of accelerations and decelerations.[1, 3]

(Strong recommendation, moderate-quality evidence)

Justification

The evidence was derived from a Cochrane systematic review comparing continuous CTG versus intermittent auscultation (IA) for assessment of fetal well-being during labor.[12] For the purposes of this guideline, only evidence derived from the low-risk subgroup of the review was included. The method of IA varied across trials to include auscultation using a Pinard fetal stethoscope and/or Doppler ultrasound device.

Summary estimates suggest little or no difference in effect on perinatal mortality, cerebral palsy, cord blood acidosis, hypoxic-ischemic encephalopathy (HIE), oxytocin augmentation and epidural analgesia, among others. Very few clinically relevant neonatal outcomes were reported

consistently in the trials.[12] In addition, as long-term follow-up was not performed, the long-term effects of the reported neonatal seizures are not known.[3]

5.5 Partogram

5.5.1 Start using the partogram when active labor is confirmed for documentation and providing a visual overview of progress.

5.5.2 Record the following observations during the first stage of labor in the partogram:

5.5.2.1 half-hourly documentation of frequency of contractions

5.5.2.2 hourly pulse

5.5.2.3 4-hourly temperature, blood pressure and respiratory rate as a minimum; in addition to other observations according to situation.[1]

(Strong recommendation, moderate-quality evidence)

Justification

Commence when active labor is confirmed.[40] Although quality of evidence for clinical benefit is low[3], it Provides a pictorial overview of progress, facilitates timely transfer of care and may assist in the detection of prolonged labor.

5.6 Maternal and fetal warning signs

5.6.1 If any of the warning signs are present or developed during labor, consult a specialist care:

- pulse over 120 beats/minute on 2 occasions 15 to 30 minutes apart
- a single reading of either raised diastolic blood pressure of 110 mmHg or more or raised systolic blood pressure of 160 mmHg or more
- either raised diastolic blood pressure of 90 mmHg or more or raised systolic blood pressure of 140 mmHg or more on 2 consecutive readings taken 15 to 30 minutes apart
- a reading of 2+ of protein on urinalysis and a single reading of either
- raised diastolic blood pressure (90 mmHg or more) or raised systolic blood pressure (140 mmHg or more)
- respiratory rate of less than 9 or more than 21 breaths per minute on 2 occasions 15 to 30 minutes apart
- temperature of 38°C or above on a single reading, or 37.5°C or above on 2 consecutive occasions 1 hour apart; for advice on intrapartum antibiotics
- fresh red bleeding or blood-stained liquor
- the new appearance of meconium
- pain reported by the woman that differs from the pain normally associated with contractions
- confirmed delay in the first stage of labor

- obstetric emergency, including antepartum hemorrhage, cord prolapse, maternal seizure or collapse, or a need for advanced neonatal resuscitation
- any non-cephalic presentation, including cord presentation
- high (4/5 to 5/5 palpable) or free-floating head in a nulliparous woman
- suspected fetal growth restriction or macrosomia
- suspected anhydramnios or polyhydramnios
- any alarming fetal heart rate pattern.[1-3]

(Strong recommendation, moderate-quality evidence)

5.7 Delayed progress in active first stage (protracted labor)

5.7.1 If delayed progress in the established first stage is suspected, assess:

- cervical dilatation of less than 2 cm in 4 hours
- descent and rotation of the baby's head
- strength, duration and frequency of uterine contraction
- condition of fetal membranes.[1]

(Strong recommendation, moderate-quality evidence)

5.7.2 Offer the woman support, hydration, and appropriate and effective pain relief.[1]

(Strong recommendation, moderate-quality evidence)

5.8 Management of delayed/protracted first stage or arrest of labor

5.8.1 Discuss the findings and the options available with the woman, and support her decision.[1-3]

(Strong recommendation, low-quality evidence)

5.8.2 For women with intact membranes in whom delay in the established first stage of labor is confirmed:

- consider amniotomy if membranes are intact
- oxytocin if inertia was diagnosed and
- repeat vaginal examination 2 hours later.[1]

(GPS, low-quality evidence)

Justification

Multiple studies have investigated the use of amniotomy compared with no intervention, other interventions, or adjunctive to other interventions during spontaneous labor and induction of labor.

A 2020 systematic review published by the Agency for Healthcare Research and Quality included five randomized controlled trials from 2007 to 2010 investigating amniotomy in pregnant women undergoing spontaneous labor compared with various control treatments. The review determined that amniotomy in spontaneous labor decreased the total duration of time in

labor for nulliparous individuals without increasing the risk for cesarean delivery, maternal infection, hemorrhage, or trauma to the pelvic floor. Neonatal outcomes were not routinely evaluated in all of the included trials, but no significant differences were noted. None of the randomized controlled trials demonstrated an increased risk of cord prolapse with amniotomy.[41]

5.8.3 If available, offer the woman an epidural analgesia before oxytocin is started or if she requests it later.[1]

(Conditional recommendation, moderate-quality evidence)

5.8.4 If oxytocin is used in the first stage of labor, ensure that the time between increments of the dose is no more frequent than every 30 minutes. Increase oxytocin until there are 3 to 4 contractions in 10 minutes.[1]

(Strong recommendation, moderate-quality evidence)

5.8.5 Oxytocin must be discontinued immediately if there is abnormality in fetal heart rate is observed.[1]

(Strong recommendation, moderate-quality evidence)

5.8.6 Consider restarting oxytocin in the first stage of labor if:

- Obstetric review has been carried out and the FHR is no longer abnormal.
- Base the dose when restarting on a full clinical assessment, taking into consideration the previous dose.[1]

(Conditional recommendation, low-quality evidence)

5.8.7 Perform vaginal examination 2 hourly after the oxytocin infusion has led to regular contractions: If cervical dilatation has increased by less than 2 cm after 4 hours of oxytocin, or there is arrest of labor, further obstetric review is needed by a senior obstetrician to assess whether a caesarean birth is advisable.[1]

(Strong recommendation, moderate-quality evidence)

Justification

Several studies have evaluated the optimal duration of oxytocin augmentation in the face of labor protraction or arrest. A prospective study of 319 pregnant women with dysfunctional labor found that, with 4 additional hours of oxytocin, 50.7% of nulliparous individuals and 41.7% of multiparous individuals delivered vaginally. In nulliparous patients, a period of 8 hours of augmentation resulted in an 18% cesarean delivery rate. In contrast, if the period of augmentation had been limited to 4 hours, the cesarean delivery rate would have been almost twice as high at 35.5%.[42] Thus, a slow but progressive active phase of labor demonstrating cervical change at least every 4 hours in the setting of reassuring maternal and fetal status should not be an indication for cesarean delivery.

6. Second stage of labor

6.1 Assessment of women during the second stage of labor

6.1.1 Continue with observations of the woman and baby, and assessment of risk as described for the first stage of labor and, but be aware that the frequency of fetal monitoring should increase.

6.1.2 Increase Frequency of observations if clinically indicated.[1, 2]

(Strong recommendation, moderate-quality evidence)

6.2 Vaginal examination

6.2.1 To assess progress, the vaginal examination should include:

- position of the head
- descent
- caput and molding.[1]

(GPS, Consensus-based)

6.3 Fundal pressure

6.3.1 Application of manual fundal pressure to facilitate childbirth during the second stage of labor is not recommended.[3]

(Strong recommendation, moderate quality evidence)

Justification

The evidence was derived from a Cochrane systematic review that included nine trials involving 3948 women.[43] Manual fundal pressure was applied according to the Kristeller manoeuvre in four trials, and as "gentle assisted pushing" in one small trial (120 women); two of these trials recruited primigravid women only. One trial limited the application of fundal pressure to three attempts. Most of the included trials had design limitations.

Concerns relating to the practice of fundal pressure are due to the possibility that serious harm might arise in the mother or the baby from the application of excessive uncontrolled force,[44, 45] including uterine and other organ rupture, and maternal and perinatal death; however, these occurrences might not often be reported in the literature.

6.4 Techniques for preventing perineal trauma

6.4.1 For women in the second stage of labor, techniques to reduce perineal trauma and facilitate spontaneous birth (including perineal massage, warm compresses and a "hands on" guarding of the perineum) are recommended.[3]

(Strong recommendation, moderate-quality evidence)

Justification

The evidence is derived from a Cochrane systematic review that included 22 individual RCTs.[46] Twenty trials involving 15 181 women contributed data. Perineal techniques performed in the second stage of labor that are included in this framework are:

perineal massage compared with a "hands-off" approach or usual care;

a “hands-off” compared with a “hands-on” approach;
a warm compress compared with a “hands-off” approach or no warm compress; and
Ritgen’s maneuver compared with usual practice.

Perineal/vaginal trauma: Low-certainty evidence suggests that perineal massage may increase the likelihood of having an intact perineum after giving birth (6 trials, 2618 women, RR 1.74, 95% CI 1.11–2.73). The absolute effect is estimated as 168 more women having an intact perineum per 1000 (from 25 to 393 more).

High-certainty evidence indicates that perineal massage reduces third- or fourth-degree perineal tears (5 trials, 2477 women, RR 0.49, 95% CI 0.25– 0.94). The absolute effect is estimated as 5 fewer per 1000 (from 2 to 22 fewer). Evidence on first- and second-degree tears, episiotomy and the need for perineal suturing is of very low certainty. The review found no evidence on long-term outcomes, maternal satisfaction or other outcomes related to birth experience.[3, 46]

6.5 Episiotomy policy

6.5.1 Routine or liberal use of episiotomy is not recommended for women undergoing spontaneous vaginal birth.[3]

(Strong recommendation, moderate-quality evidence)

6.5.2 If an episiotomy is performed, the recommended technique is a mediolateral episiotomy originating at the vaginal fourchette and usually directed to the right side. The angle to the vertical axis should be between 45 and 60 degrees at the time of the episiotomy.[1]

(Strong recommendation, moderate-quality evidence)

6.5.3 Perform an episiotomy if there is a clinical need, such as birth with forceps or ventouse or suspected fetal compromise.

6.5.4 Provide tested, effective analgesia before carrying out an episiotomy, except in an emergency because of acute fetal compromise.[1]

(Strong recommendation, moderate-quality evidence)

Justification

The evidence was derived from a Cochrane systematic review that included 12 RCTs (168). In 11 trials, participants were women in labor for whom a vaginal birth was anticipated. Differences in episiotomy rates between the study groups in the trials varied from 21% to 91%, with three trials reporting a difference of less than 30%. In the selective episiotomy groups, episiotomy rates ranged from 8% to 59% (median 32%), and in the routine or liberal episiotomy groups they ranged from 51% to 100% (median 83%).[46]

Low-certainty evidence suggests that a policy of selective/restrictive episiotomy may reduce severe perineal/vaginal trauma (mainly third- and fourth-degree tears) compared with routine or liberal episiotomy (11 trials, 6177 women, RR 0.70, 95% CI 0.52–0.94). Subgroup

analysis by parity suggests that the episiotomy policy might not make a difference to perineal/vaginal trauma in multigravid women, but the evidence is very uncertain. A selective/restrictive episiotomy policy may reduce the need for perineal suturing (excluding episiotomy repair) (6 trials, 4333 women, RR 0.68, 95% CI 0.58–0.78); however, the data in some trials may have included episiotomy repair, making the evidence uncertain.[46]

Low-certainty evidence suggests that selective/ restrictive episiotomy may have little or no effect on perineal infection (3 trials, 1467 women, RR 0.90, 95% CI 0.45–1.82). Evidence on relative blood loss at birth is very uncertain.

For long-term morbidity at 6 months or more after childbirth, low-certainty evidence suggests there may be little or no effect of selective/restrictive versus routine or liberal episiotomy on dyspareunia (pain during intercourse) (3 trials, 1107 women, RR 1.14, 95% CI 0.84–1.53). Evidence on other long-term morbidity is sparse and very uncertain (urinary incontinence, genital prolapse), or lacking (fecal incontinence, sexual dysfunction).[46]

Evidence on low Apgar scores (< 7 at 5 minutes) is of very low certainty, mainly because the sample size is small (2 trials, 511 babies) and no events occurred in either comparison group.[3, 46]

6.6 Shortening of the 2nd stage[1]

6.6.1 Delay in active second stage is diagnosed when:

- In nulliparous woman (any of): either insufficient flexion/rotation/descent within 1 hour or the second stage duration is > 2 hours.
- In multiparous woman (any of): either insufficient flexion/rotation/descent within 30 minutes or the second stage duration is > 1 hour.
- Longer durations may be appropriate where maternal and fetal condition is optimal.

(GPS, very low-quality evidence)

6.6.2 A specific absolute maximum length of second stage (passive plus active) has not been identified. Rather than rigid time limits, base decision-making on continuing assessment of:

- Maternal physical and emotional condition
- Fetal condition
- Progress of labor
- Maternal preferences.[5]

(Strong recommendation, moderate-quality evidence)

6.6.3 Operative vaginal delivery in second stage of labor by experienced and well-trained physicians should be considered safe, acceptable alternative to cesarean delivery. Training in, and ongoing maintenance of, practical skills related to operative vaginal delivery should be encouraged.[47-51]

6.6.4 Training in, and ongoing maintenance of, practical skills related to operative vaginal delivery should be encouraged.

(Strong recommendation, moderate-quality evidence)

7. Third stage of labor

7.1 Management of third stage of labor

7.1.1 The use of uterotonics for prevention of PPH during the third stage of labor is recommended for all births.[52, 53]

(Strong recommendation, high-quality evidence)

7.1.2 Cord clamping:

7.1.2.1 Late cord clamping (performed approximately 1 to 3 minutes after birth) is recommended for all births while initiating simultaneous essential newborn care.[54]

(Strong recommendation, moderate-quality evidence)

7.1.2.2 Early cord clamping (<1 minute after birth) is not recommended unless the neonate is asphyxiated and needs to be moved immediately for resuscitation.[54]

(Strong recommendation, moderate-quality evidence)

Justification

The evidence base for recommendations for the timing of cord clamping includes both vaginal and caesarean births. Delayed clamping should be performed during the provision of essential newborn care.[55] The recommendations for the timing of cord clamping apply equally to preterm and term births. The GDG considers the benefits of delayed clamping for preterm infants to be particularly important.

Some health professionals working in areas of high HIV prevalence have expressed concern regarding delayed cord clamping as part of management of the third stage of labor. These professionals are concerned that during placental separation, a partially detached placenta could be exposed to maternal blood and this could lead to a micro-transfusion of maternal blood to the baby. It has been demonstrated that the potential for maternal-to-child transmission of HIV can take place at three different points in time: micro-transfusions of maternal blood to the fetus during pregnancy (intra-uterine HIV transmission), exposure to maternal blood and vaginal secretions when the fetus passes through the birth canal in vaginal deliveries (intra-partum transmission), and during breastfeeding (postnatal infection).

For this reason, the main intervention to reduce the maternal-to-child transmission is the reduction of maternal viral load through the use of antiretroviral drugs during pregnancy, childbirth and postnatal period. There is no evidence that delaying the cord clamping increases the possibility of HIV transmission from the mother to the newborn. Maternal blood percolates through the placental intervillous space throughout pregnancy with a relatively low risk of maternal fetal transmission before delivery. It is highly un likely that separation of the placenta

increases exposure to maternal blood, and is highly unlikely that it disrupts the fetal placental circulation (i.e. it is unlikely that during placenta separation the newborn circulation is exposed to maternal blood). Thus, the proven benefits of a 1 – 3 minutes delay at least in clamping the cord outweigh the theoretical, and unproven, harms. Late cord clamping is recommended even among women living with HIV or women with unknown HIV status.

7.1.3 Controlled cord traction:

7.1.3.1 Consider Controlled cord traction (CCT) as part of active/modified active management of third stage.[56]

(Strong recommendation, low-quality evidence)

7.1.3.2 Providers employing CCT should only do so after signs of placental separation, and traction should be performed with uterine contraction as these measures reduce the risk of uterine inversion, cord avulsion, and partial detachment of the placenta.[53, 56]

(Strong recommendation, moderate-quality evidence)

7.2 Prophylactic Uterotonics

7.2.1 Oxytocin

The following are recommendations for Oxytocin use in the prevention of PPH: [1, 52, 53, 57-63]

7.2.1.1 In most circumstances, oxytocin is the prophylactic uterotonic of choice.[59, 62]

7.2.1.2 For vaginal birth:

- If vaginal birth with IV access: Oxytocin 10 IU IV injected slowly over 3–5 minutes is recommended in preference to IM.[52, 53, 58]
- If vaginal birth without IV access: Oxytocin 10 IU IM.[53, 57]

(Strong recommendation, high-quality evidence)

Justification

When compared with IM, IV oxytocin reduces the risk of PPH, need for blood transfusion,[58, 64, 65] and incidence of retained placenta with no significant difference in side effects (e.g. hypotension and tachycardia) between routes.[1, 58]

7.2.1.3 For CS birth:

- Oxytocin 5 IU IV over 1–2 minutes
- Monitor for hemodynamic impact
- Avoid rapid IV bolus administration.[57, 60, 63]

7.2.1.4 If cardiovascular compromise exists (e.g. hypovolemia, shock, cardiac disease), use caution with IV administration.[58, 61]

(Strong recommendation, high-quality evidence)

Justification

Oxytocin may result in transient hemodynamic instability.[58, 61]

7.2.2 Ergometrine

The following are recommendations for Ergometrine use in the prevention of PPH: [1, 57]

7.2.2.1 Ergometrine can be given IM or, in life-saving circumstances, as a slow IV injection.[57]

(Conditional recommendation, low-quality evidence)

7.2.2.2 Ergometrine should not be used in patients with essential or gestational hypertension, or in patients on HIV protease inhibitors.[57]

(Strong recommendation, moderate-quality evidence)

7.2.2.3 Though undisputedly extremely effective, potential adverse effects limit ergometrine to a second-line agent.[1, 57]

(Conditional recommendation, low-quality evidence)

Justification

The GDG is aware of the 2025 WHO position not to recommend the prophylactic use of fixed-dose combination of oxytocin and ergometrine because of concerns about safety. However, if the health worker and the woman regard the additional benefits of a combination of oxytocin and ergometrine (over either of these agents alone) is important in improving overall maternal outcomes, the use of ergometrine could be considered.

7.2.3 Carbetocin

The following are recommendations for Carbetocin use in the prevention of PPH: [1, 59, 66-69]

7.2.3.1 Routinely use oxytocin in preference to carbetocin if vaginal birth and cold-chain storage of oxytocin can be guaranteed (e.g. hospital setting).[59, 66]

7.2.3.2 If vaginal birth and cold-chain storage of uterotonics cannot be guaranteed:

- Carbetocin is an effective alternative uterotonic.[53, 69]
- IM is preferred route of Carbetocin administration.[69]

7.2.3.3 If CS birth under regional anesthetic: IV carbetocin may be considered as a cost-effective uterotonic.[1, 67, 68]

7.2.3.4 If CS birth under general anesthetic: Carbetocin is not recommended due to insufficient evidence.[69]

7.2.3.5 Use Carbetocin as a single dose only, not for repeated use.[69]

(Conditional recommendation, moderate-quality evidence)

7.2.4 Misoprostol

The following are recommendations for Misoprostol use in the prevention of PPH:[53, 62, 68, 70-73]

7.2.4.1 Misoprostol is Not recommended as a prophylactic uterotonic if alternative injectable uterotonics are available.[68, 73]

7.2.4.2 Use only if no other injectable uterotonic is available (e.g. due to unexpected birth in low resource setting or if storage conditions for uterotonics are inadequate).[62, 70, 72, 73]

7.2.4.3 The dose is 600 micrograms orally or sublingual single dose immediately after birth.[53, 62, 70, 73]

7.2.4.4 If in a low resource setting with limited PPH treatment capability, consider use if:

- an injectable uterotonic has been administered and
- continued bleeding is anticipated and/or blood loss is estimated to be greater than or equal to 350 ml.[62, 73]

(Conditional recommendation, moderate-quality evidence)

7.3 Tranexamic Acid (TXA) For Prophylaxis in High-Risk Women

7.3.1 Tranexamic acid can be used as a prophylactic agent as an adjunct to uterotonics in patients at high risk for postpartum hemorrhage.[74]

(Strong recommendation, high-quality evidence)

7.3.2 Use TXA within 3 hours of birth of the baby in a fixed dose of 1 g in 10 mL IV over 10 minutes (100 mg/min i.e. 1 ml /minute).[74-76]

(Strong recommendation, high-quality evidence)

Justification

GDG is aware of the WHO recommendation in 2025[53]; “Tranexamic acid is not recommended for the prevention of postpartum hemorrhage at vaginal birth”.

The GDG considered that since there is no clear evidence of increased risk of maternal or newborn harms, or serious life-threatening adverse events with TXA, and considering the risk of thromboembolic events that may increase with the use of TXA, the GDG agreed that the use of TXA for prevention of PPH is recommended but limited to women at high risk for PPH where in this population the benefit for reducing postpartum blood loss at childbirth outweighs the risk of TXA.

7.4 Prolonged third stage

7.4.1 Diagnose a prolonged third stage of labor if it is not completed within 30 minutes of the birth with active management or within 60 minutes of the birth with physiological management.[1]

(Strong recommendation, moderate-quality evidence)

7.5 Placenta and membranes examination

7.5.1 Perform a thorough examination of the placenta and membranes:

7.5.1.1 Placenta:

- General shape and appearance
- Calcification or infarctions
- Evidence of abruption
- Missing cotyledons
- Succenturiate lobe/s

7.5.1.2 Membranes:

- One amnion and one chorion
- Complete or ragged
- Presence of vessels

7.5.1.3 Cord:

- Cord insertion site
- Two arteries and one vein
- Velamentous insertion: Vessels noted in membranes.[2]

(Strong recommendation, moderate-quality evidence)

7.6 Immediate Postpartum Risk Management

7.6.1 Uterine massage:

7.6.1.1 Sustained uterine massage is not recommended as an intervention to prevent PPH in women who have received prophylactic oxytocin. (Strong, low-quality evidence)[53, 77]

(Strong recommendation, low-quality evidence)

7.6.2 Uterine tonus assessment:

7.6.2.1 Postpartum abdominal uterine tonus assessment for early identification of uterine atony is recommended for all women.[2, 53]

(Strong recommendation, low-quality evidence)

7.6.3 Nipple stimulation & breast feeding:

7.6.3.1 Nipple stimulation and/or early breastfeeding may increase uterine activity but has not been shown to reduce bleeding or incidence of PPH.[78]

(Strong recommendation, low-quality evidence)

7.6.4 Observation for women with risk factors:

7.6.4.1 The following should be observed for women in the first 2 hours postpartum:[79]

- **Vital signs:** Respiratory rate, pulse rate, and blood pressure, every 15-30 minutes in the first hour and every 30 minutes in the second hour.
- **Blood Loss** every 15-30 minutes by visualizing the labia and perineum and be alert for slow steady trickle.
- **Uterine tonus assessment**
- **Temperature** every 30 minutes
- **Urine output:** after the first 2 hours

(Strong recommendation, moderate-quality evidence)

7.6.4.2 After the first 2 hours continue observations as clinically indicated.[79]

7.6.5 Women who have had regional analgesia or anesthesia:

7.6.5.1 Check that women who have had regional analgesia or anesthesia can perform a straight leg raise by 4 hours after the last anesthetic dose. If not, contact the obstetric anesthetist for urgent review.[1]

(Strong recommendation, moderate-quality evidence)

7.7 Antibiotics use with normal labor

7.7.1 Use according to the local protocols

(GPS, consensus-based)

7.8 Episiotomy/1st and 2nd degree perineal tears repair

7.8.1 Ensure that tested effective analgesia is in place, using infiltration with up to 20 ml of 1% lidocaine or equivalent

7.8.2 Top up the epidural or insert a spinal anesthetic if necessary

7.8.3 If the woman reports inadequate pain relief at any point, manage immediately with pharmacological and/or non-pharmacological measures

7.8.4 In episiotomy and first/second degrees tears, the wound should be sutured in order to improve healing.

7.8.5 Suture use a continuous subcuticular technique

7.8.6 Undertake perineal repair using a continuous non-locked suturing technique for the vaginal wall and muscle layer.

7.8.7 Use an absorbable synthetic suture material to suture the perineum.

7.8.8 Offer rectal non-steroidal anti-inflammatory drugs routinely after perineal repair of first- and second-degree trauma provided these drugs are not contraindicated.

7.8.9 Ensure that suture material has not been accidentally inserted through the rectal mucosa by carrying out a rectal examination after completing the repair

7.8.10 After completion of the repair, document an accurate detailed account covering the extent of the trauma, the method of repair and the materials used

7.8.11 Give the woman information about the extent of the trauma, pain relief, diet, hygiene and the importance of learning to do pelvic floor exercises, what to expect as they recover, and where and when to seek advice or psychological support if needed.[2]

(Strong recommendation, moderate-quality evidence)

7.9 Postnatal discharge following uncomplicated vaginal birth

7.9.1 After an uncomplicated vaginal birth in a health care facility, we advise that healthy mothers and newborns should receive care in the facility for 12-24 hours after birth.

(GPS, consensus-based)

Justification

This recommendation has been integrated from the WHO recommendations on postnatal care of the mother and newborn.[80] An appropriate standard of care for mothers and newborns should be provided in health care facilities, in accordance with other existing WHO guidelines.

For the newborn this includes an immediate assessment at birth, and a full clinical examination around one hour after birth and again before discharge.

7.10 Physiological care

7.10.1 Respond to requests for pain management

7.10.2 Consider personal hygiene needs

7.10.3 Observe emotional and psychological response to labor and birth

7.10.4 Observe response towards the baby and encourage breast feeding

7.10.5 Venous thromboembolism (VTE) risk assessment.

7.10.6 Iron supplementation is advised.[2]

(Strong recommendation, moderate-quality evidence)

7.11 Rh D negative blood group

7.11.1 Test the baby's Rh status.

7.11.2 We recommend Rh D immunoglobulin if maternal indirect Coomb's test is negative.[2]

(Strong recommendation, High-quality evidence)

8. Intrapartum analgesia

8.1 Non-pharmacological pain-relieving strategies

8.1.1 Advise women that breathing exercises and having a shower or bath may reduce pain during the latent first stage of labor.[1, 6]

(Conditional recommendation, low-quality evidence)

8.2 Pharmacological analgesia

8.2.1 Opioid analgesia for pain relief

8.2.1.1 Parenteral opioids, such as fentanyl, diamorphine and pethidine, are recommended options for healthy pregnant women requesting pain relief during labor, depending on a woman's preferences ana availability.

(Conditional recommendation, low-quality evidence)

8.2.1.2 Inform the woman that these will provide limited pain relief during labor and may have significant side effects for both her (for example, drowsiness, nausea and vomiting) and her baby (for example, short-term respiratory depression and drowsiness, which may last several days and may make it more difficult to breastfeed).

(Conditional recommendation, low-quality evidence)

8.2.1.3 It is not advisable to give opioids if delivery is expected within 3 hours.

(GPS, consensus-based)

8.2.1.4 If an intravenous or intramuscular opioid is used, also administer an antiemetic.[1, 3, 6]

(Conditional recommendation, low-quality evidence)

8.2.2 Antispasmodic agents

8.2.2.1 The use of antispasmodic agents for prevention of delay in labor is not recommended.[3]

(Conditional recommendation, low-quality evidence)

8.3 Epidural analgesia for pain relief

8.3.1 Epidural analgesia may be offered for healthy pregnant women requesting pain relief during labor, depending on a woman's preferences and availability.[3]

(Conditional recommendation, low-quality evidence)

8.3.2 Obstetric care and observations for women with regional analgesia

8.3.2.1 Care and observations for women with epidural analgesia should be jointly managed with the anesthetist.

8.3.2.2 Insert urinary catheter.

8.3.2.3 Perform continuous cardiotocography for at least 30 minutes during establishment of regional analgesia and after administration of each further bolus of 10 ml or more.[1]

8.3.2.4 On confirmation of full cervical dilatation in a woman with regional analgesia, unless the woman has an urge to push or the baby's head is visible, pushing may be delayed by 1 hour for multiparous women and up to 2 hours for nulliparous women, after which actively encourage her to push during contractions.

8.3.2.5 Do not routinely use oxytocin in the second stage of labor for women with regional analgesia.

8.3.2.6 Continue epidural analgesia until after completion of the third stage of labor and any necessary perineal repair.

(Strong recommendation, moderate-quality evidence)

Implementation considerations

Several barriers may hinder the effective implementation and scale-up of the recommendations in this guideline. These factors may be related to the behaviors of patients (or families), the behavior of healthcare professionals, the organization of care, health service delivery or financial arrangements.

Obstacles to effective implementation include:

- Patient engagement
- Collaboration; person centered, team-based collaboration between clinician, dietitian, pharmacist and others involved in care delivery
- Behavior changes: information, guidance and support delivered easily and consistently can help assess sustained behavioral changes.

Research needs

- **Restarting oxytocin**

What is the most effective dosage at which oxytocin should be recommenced once stopped in labor because of an abnormal cardiotocography?

- **Pushing Techniques and Positions**

There is still debate on the "best" way to push, especially with an epidural.

- Comparison of **directed pushing** (Valsalva) vs. **spontaneous pushing** (physiological) on long-term pelvic floor health.
- Does the position (upright vs. lateral) in the second stage significantly reduce the incidence of 3rd and 4th-degree perineal tears?

Clinical Quality Indicators for Monitoring

Here we will put 3 - 5 quality standards that can be measured and here is what are quality standards and how to write them:

Measuring and monitoring quality of care is recognized as a tool for improving health services and outcomes by healthcare payers and providers throughout the world.

Measuring clinical quality standards in healthcare facilities assesses many aspects of healthcare provided specifically assessing health outcomes, clinical processes, patient safety, efficient use of health care resources, care coordination, and adherence to clinical guidelines.

We will **concentrate on data that can be obtained from the INPATIENT file** of the patient.

A CQS has two main components:

1- **A quality statement** (**QS**): ***a clear and concise sentence taken from the strong recommendations*** describing ***high-priority areas***.

2- A quality measure (**QM**). a ***quantitative measure*** of care quality or service provision specified in the quality statement, and comprise any of three components***: structure, care***

process or outcome measure. Quality measures, for process and outcome are specified in the form of a ***numerator and a denominator*** which define a proportion (numerator/denominator). The numerator is assumed to be a subset of the denominator population. For structures, the quality measure is evidence of what the statement refers to.

➢ **Admission and Assessment**	
QS.1	Women presenting in the latent phase of labor without complications are supported to remain at home or in a non-clinical setting until established labor is confirmed.
QM.1	**Numerator:** Number of low-risk women admitted to the labor ward with cervical dilatation < 5 cm. **Denominator:** Total number of low-risk women admitted to the labor ward.
➢ **Fetal Monitoring**	
QS.2	Offer intermittent auscultation (IA) as the primary method of fetal heart rate monitoring for healthy women in normal labor, avoiding routine continuous CTG.
QM.2	**Numerator:** Number of low-risk women in labor monitored via intermittent auscultation. **Denominator:** Total number of low-risk women in labor.
➢ **Prevention of Unnecessary Intervention**	
QS.3	Healthcare providers must not perform routine medical interventions, such as: amniotomy, oxytocin augmentation, perineal shaving, or enemas—in women with a normally progressing labor.
QM.3	**Numerator:** Number of women in normal labor who received routine amniotomy or oxytocin without a diagnosis of delay. **Denominator:** Total number of women with spontaneous, uncomplicated labor progress.
➢ **Third Stage Management**	
QS.4	All women are offered prophylactic uterotonics (preferably Oxytocin 10 IU) during the third stage of labor to prevent postpartum hemorrhage (PPH).
QM.4	**Numerator:** Number of women who received a prophylactic uterotonic within 3 minutes of birth. **Denominator:** Total number of vaginal births.
➢ **Pain Management & Patient Experience**	
QS.5	Women requesting regional analgesia (epidural) are provided with the service regardless of the stage of labor, provided there are no medical contraindications.
➢	
QM.5	**Numerator:** Number of women who requested an epidural and received it within a timely manner (e.g., 60 minutes). **Denominator:** Total number of women requesting regional analgesia in labor.

Updating of the guidelines

This guideline will be updated whenever there is new evidence.

References

1. National Institute for Health and Care Excellence (NICE). Intrapartum care. NICE guideline NG235 London: NICE; 2023 [updated 2025 Nov 14. Available from: https://www.nice.org.uk/guidance/ng235.
2. Queensland Clinical Guidelines. Normal birth: Queensland Health; 2023 [Available from: https://www.health.qld.gov.au/__data/assets/pdf_file/0014/142007/g-normalbirth.pdf.
3. WHO recommendations: intrapartum care for a positive childbirth experience Geneva: World Health Organization; 2018 [Available from: https://www.who.int/publications/i/item/9789241550215.
4. First and Second Stage Labor Management: ACOG Clinical Practice Guideline No. 8. Obstet Gynecol. 2024;143(1):144-62.
5. ACOG Committee Opinion No. 766: Approaches to Limit Intervention During Labor and Birth. Obstet Gynecol. 2019;133(2):e164-e73.
6. Queensland Clinical Guidelines. Intrapartum pain management: Queensland Health; 2023 [Available from: https://www.health.qld.gov.au/__data/assets/pdf_file/0014/1211126/g-intrapartum-pain.pdf.
7. Buckley SJ. Executive Summary of Hormonal Physiology of Childbearing: Evidence and Implications for Women, Babies, and Maternity Care. J Perinat Educ. 2015;24(3):145-53.
8. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG). Routine antenatal assessment in the absence of pregnancy complications [Internet]. RANZCOG. 2019. Available from: https://ranzcog.edu.au/.
9. Heelan-Fancher L, Shi L, Zhang Y, Cai Y, Nawai A, Leveille S. Impact of continuous electronic fetal monitoring on birth outcomes in low-risk pregnancies. Birth. 2019;46(2):311-7.
10. National Institute for Health and Care Excellence (NICE). Fetal monitoring in labour. NICE guideline NG229 London: NICE; 2022 [updated November 12, 2025. Available from: https://www.nice.org.uk/guidance/ng229.
11. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG). Intrapartum fetal surveillance clinical guideline (C-Obs 1) Melbourne: RANZCOG; 2025 [Available from: https://www.ranzcog.edu.au.
12. Alfirevic Z, Devane D, Gyte GM, Cuthbert A. Continuous cardiotocography (CTG) as a form of electronic fetal monitoring (EFM) for fetal assessment during labour. Cochrane Database Syst Rev. 2017;2(2):CD006066.
13. Lindsay p, Bagness C, Peate I. Midwifery skills at a glance. Hoboken, NJ: Wiley-Blackwell; 2018.
14. Bailit JL, Dierker L, Blanchard MH, Mercer BM. Outcomes of women presenting in active versus latent phase of spontaneous labor. Obstet Gynecol. 2005;105(1):77-9.
15. Neal JL, Lamp JM, Buck JS, Lowe NK, Gillespie SL, Ryan SL. Outcomes of nulliparous women with spontaneous labor onset admitted to hospitals in preactive versus active labor. J Midwifery Womens Health. 2014;59(1):28-34.
16. Wood AM, Frey HA, Tuuli MG, Caughey AB, Odibo AO, Macones GA, et al. Optimal Admission Cervical Dilation in Spontaneously Laboring Women. Am J Perinatol. 2016;33(2):188-94.
17. McNiven PS, Williams JI, Hodnett E, Kaufman K, Hannah ME. An early labor assessment program: a randomized, controlled trial. Birth. 1998;25(1):5-10.
18. Zhang J, Troendle JF, Yancey MK. Reassessing the labor curve in nulliparous women. Am J Obstet Gynecol. 2002;187(4):824-8.

19. Zhang J, Troendle J, Reddy UM, Laughon SK, Branch DW, Burkman R, et al. Contemporary cesarean delivery practice in the United States. Am J Obstet Gynecol. 2010;203(4):326 e1- e10.
20. Obstetric care consensus no. 1: safe prevention of the primary cesarean delivery. Obstet Gynecol. 2014;123(3):693-711.
21. Ruhl C, Scheich B, Onokpise B, Bingham D. Content Validity Testing of the Maternal Fetal Triage Index. J Obstet Gynecol Neonatal Nurs. 2015;44(6):701-9.
22. Committee Opinion No. 667: Hospital-Based Triage of Obstetric Patients. Obstet Gynecol. 2016;128(1):e16-e9.
23. Simkin P, Bolding A. Update on nonpharmacologic approaches to relieve labor pain and prevent suffering. J Midwifery Womens Health. 2004;49(6):489-504.
24. Committee Opinion No. 679: Immersion in Water During Labor and Delivery. Obstet Gynecol. 2016;128(5):e231-e6.
25. Downe S, Lawrie TA, Finlayson K, Oladapo OT. Effectiveness of respectful care policies for women using routine intrapartum services: a systematic review. Reprod Health. 2018;15(1):23.
26. Lawrence A, Lewis L, Hofmeyr GJ, Styles C. Maternal positions and mobility during first stage labour. Cochrane Database Syst Rev. 2013;2013(10):CD003934.
27. Malin GL, Bugg GJ, Thornton J, Taylor MA, Grauwen N, Devlieger R, et al. Does oral carbohydrate supplementation improve labour outcome? A systematic review and individual patient data meta-analysis. BJOG. 2016;123(4):510-7.
28. Downe S, Finlayson K, Oladapo OT, Bonet M, Gulmezoglu AM. What matters to women during childbirth: A systematic qualitative review. PLoS One. 2018;13(4):e0194906.
29. Thomson G, Feeley C, Moran VH, Downe S, Oladapo OT. Women's experiences of pharmacological and non-pharmacological pain relief methods for labour and childbirth: a qualitative systematic review. Reprod Health. 2019;16(1):71.
30. WHO recommendations for prevention and treatment of maternal peripartum infections Geneva: World Health Organization; 2015 [Available from: https://iris.who.int/server/api/core/bitstreams/1ca2f289-26cd-4ea5-b715-23f903cff7e8/content.
31. Basevi V, Lavender T. Routine perineal shaving on admission in labour. Cochrane Database Syst Rev. 2014;2014(11):CD001236.
32. Reveiz L, Gaitan HG, Cuervo LG. Enemas during labour. Cochrane Database Syst Rev. 2013;2013(7):CD000330.
33. WHO recommendations for augmentation of labour Geneva: World Health Organization; 2014 [Available from: https://iris.who.int/server/api/core/bitstreams/cd4f3c19-fbea-487a-bf00-c7810008a7a5/content.
34. Kobayashi S, Hanada N, Matsuzaki M, Takehara K, Ota E, Sasaki H, et al. Assessment and support during early labour for improving birth outcomes. Cochrane Database Syst Rev. 2017;4(4):CD011516.
35. Abalos E, Oladapo OT, Chamillard M, Diaz V, Pasquale J, Bonet M, et al. Duration of spontaneous labour in 'low-risk' women with 'normal' perinatal outcomes: A systematic review. Eur J Obstet Gynecol Reprod Biol. 2018;223:123-32.
36. WHO recommendations: Optimizing health worker roles to improve access to key maternal and newborn health interventions through task shifting Geneva: World Health Organizatio; 2012 [Available from: https://iris.who.int/server/api/core/bitstreams/94326918-1f91-49a2-a857-12831cd51b91/content.
37. Bonet M, Oladapo OT, Souza JP, Gulmezoglu AM. Diagnostic accuracy of the partograph alert and action lines to predict adverse birth outcomes: a systematic review. BJOG. 2019;126(13):1524-33.
38. Estimation of unit costs for general health services: updated WHO-CHOICE estimates. Technical background report Geneva: World Health Organization; 2011 [Available from: https://cdn.who.int/media/docs/default-source/health-economics/choice-estimates-updates2011.pdf

39. Lowe NK. A review of factors associated with dystocia and cesarean section in nulliparous women. J Midwifery Womens Health. 2007;52(3):216-28.
40. Dalal AR, Purandare AC. The Partograph in Childbirth: An Absolute Essentiality or a Mere Exercise? J Obstet Gynaecol India. 2018;68(1):3-14.
41. De Vivo V, Carbone L, Saccone G, Magoga G, De Vivo G, Locci M, et al. Early amniotomy after cervical ripening for induction of labor: a systematic review and meta-analysis of randomized controlled trials. Am J Obstet Gynecol. 2020;222(4):320-9.
42. Arulkumaran S, Koh CH, Ingemarsson I, Ratnam SS. Augmentation of labour--mode of delivery related to cervimetric progress. Aust N Z J Obstet Gynaecol. 1987;27(4):304-8.
43. Hofmeyr GJ, Vogel JP, Cuthbert A, Singata M. Fundal pressure during the second stage of labour. Cochrane Database Syst Rev. 2017;3(3):CD006067.
44. Habek D, Vuković Bobić M, Hrgović Z. Possible feto-maternal clinical risk of the Kristeller's expression. Central European Journal of Medicine. 2008;3(2): 183–6.
45. Zanconato G, Cavaliere E, Cherubini G, Bortolami O, Mantovani E, Iacovella C, et al. Fundal pressure (Kristeller maneuver) during labor in current obstetric practice: assessment of prevalence and feto-maternal effects. Minerva Ginecol. 2014;66(2):239-41.
46. Aasheim V, Nilsen ABV, Reinar LM, Lukasse M. Perineal techniques during the second stage of labour for reducing perineal trauma. Cochrane Database Syst Rev. 2017;6(6):CD006672.
47. Towner D, Castro MA, Eby-Wilkens E, Gilbert WM. Effect of mode of delivery in nulliparous women on neonatal intracranial injury. N Engl J Med. 1999;341(23):1709-14.
48. Powell J, Gilo N, Foote M, Gil K, Lavin JP. Vacuum and forceps training in residency: experience and self-reported competency. J Perinatol. 2007;27(6):343-6.
49. Shaffer BL, Caughey AB. Forceps delivery: potential benefits and a call for continued training. J Perinatol. 2007;27(6):327-8.
50. O'Mahony F, Hofmeyr GJ, Menon V. Choice of instruments for assisted vaginal delivery. Cochrane Database Syst Rev. 2010(11):CD005455.
51. ACOG Practice Bulletin No. 154: Operative Vaginal Delivery. Obstet Gynecol. 2015;126(5):e56-e65.
52. Muñoz M, Stensballe J, Ducloy-Bouthors AS, Bonnet MP, De Robertis E, Fornet I, et al. Patient blood management in obstetrics: prevention and treatment of postpartum haemorrhage. A NATA consensus statement. Blood Transfus. 2019;17(2):112-36.
53. WHO recommendations. Consolidated guidelines for the prevention, diagnosis and treatment of postpartum haemorrhage Geneva, Switzerland: World Health Organization; 2025 [Available from: https://www.ncbi.nlm.nih.gov/books/NBK619236/.
54. Chaudhary P, Priyadarshi M, Singh P, Chaurasia S, Chaturvedi J, Basu S. Effects of delayed cord clamping at different time intervals in late preterm and term neonates: a randomized controlled trial. Eur J Pediatr. 2023;182(8):3701-11.
55. World Health Organization. Guidelines on basic newborn resuscitation. Geneva:2012 [Available from: http://apps.who.int/iris/bitstream/10665/75157/1/9789241503693_eng.pdf.
56. Hofmeyr GJ, Mshweshwe NT, Gulmezoglu AM. Controlled cord traction for the third stage of labour. Cochrane Database Syst Rev. 2015;1(1):CD008020.
57. Prevention and Management of Postpartum Haemorrhage: Green-top Guideline No. 52. BJOG. 2017;124(5):e106-e49.
58. Wu Y, Wang H, Wu QY, Liang XL, Wang J. A meta-analysis of the effects of intramuscular and intravenous injection of oxytocin on the third stage of labor. Arch Gynecol Obstet. 2020;301(3):643-53.
59. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG): Management of postpartum haemorrhage Melbourne, Australia RANZCOG; 2021 [Available from: https://ranzcog.edu.au.

60. Baliuliene V, Vitartaite M, Rimaitis K. Prophylactic Dose of Oxytocin for Uterine Atony during Caesarean Delivery: A Systematic Review. Int J Environ Res Public Health. 2021;18(9).
61. Lee S-K, Cauldwell M, Wendler R, editors. Cardiac effects of drugs used for induction of labour and prevention and treatment of postpartum haemorrhage2021.
62. Escobar MF, Nassar AH, Theron G, Barnea ER, Nicholson W, Ramasauskaite D, et al. FIGO recommendations on the management of postpartum hemorrhage 2022. Int J Gynaecol Obstet. 2022;157 Suppl 1(Suppl 1):3-50.
63. Tyagi A, Deep S, Salhotra R, Malhotra R, Singla A. Minimum effective dose of oxytocin bolus during the caesarean section for patients at high vs low risk of uterine atony: A non-randomized, dual-arm, dose-finding prospective trial. Indian J Anaesth. 2023;67(8):690-6.
64. Oladapo OT, Okusanya BO, Abalos E, Gallos ID, Papadopoulou A. Intravenous versus intramuscular prophylactic oxytocin for the third stage of labour. Cochrane Database Syst Rev. 2020;11(11):Cd009332.
65. Zhou YH, Xie Y, Luo YZ, Liu XW, Zhou J, Liu Q. Intramuscular versus intravenous oxytocin for the third stage of labor after vaginal delivery to prevent postpartum hemorrhage: a meta-analysis of randomized controlled trials. Eur J Obstet Gynecol Reprod Biol. 2020;250:265-71.
66. WHO recommendations: uterotonics for the prevention of postpartum haemorrhage.: World Health Organization; 2018 [Available from: https://who.int.
67. Robinson D, Basso M, Chan C, Duckitt K, Lett R. Guideline No. 431: Postpartum Hemorrhage and Hemorrhagic Shock. J Obstet Gynaecol Can. 2022;44(12):1293-310 e1.
68. Intrapartum care [M]: Evidence reviews for uterotonics for the prevention of postpartum haemorrhage. NICE guideline NG235. Evidence reviews underpinning recommendations 1.10.9 to 1.10.11 and 1.10.13 London, UK: NICE; 2023 [Available from: https://www.nice.org.uk/guidance/ng235/evidence/m-uterotonics-for-the-prevention-of-postpartum-haemorrhage-pdf-474720226456.
69. Australian Medicines Handbook. Carbetocin Adelaide, Australia: Australian Medicines Handbook Pty Ltd; 2024 [Available from: https://amhonline.amh.net.au.
70. World Health Organization. WHO recommendations for the prevention and treatment of postpartum haemorrhage Geneva, Switzerland2012 [Available from: https://iris.who.int/server/api/core/bitstreams/36ea885b-7472-4b89-9605-81535f6a53c6/content.
71. International Federation of Gynecology and Obstetrics (FIGO). Misoprostol-only: recommended regimens London, UK: FIGO; 2017 [Available from: https://www.figo.org/sites/default/files/2020-03/Misoprostol_Card_2017_EN_1.pdf.
72. Drew T, Carvalho JCA. Pharmacologic Prevention and Treatment of Postpartum Hemorrhage. . Curr Anesthesiol Rep. 2021;11:37-47.
73. Australian Medicines Handbook. Misoprostol (obstetrics). Adelaide: Australian: Medicines Handbook Pty Ltd; 2024 [Available from: https://www.amh.net.au.
74. Collaborators WT. Effect of early tranexamic acid administration on mortality, hysterectomy, and other morbidities in women with post-partum haemorrhage (WOMAN): an international, randomised, double-blind, placebo-controlled trial. Lancet. 2017;389(10084):2105-16.
75. WHO recommendation on tranexamic acid for the treatment of postpartum Hemorrhage. Geneva: World Health Organization; 2017 [Available from: https://iris.who.int/handle/10665/259374.
76. National Blood Authority (NBA). Patient blood management guideline for adults with critical bleeding. Publisher:, National Blood Authority Place Published: Canberra, ACT: Commonwealth of Australia, National Blood Authority; 2023 [Available from: https://www.blood.gov.au/clinical-guidance/patient-blood-management.
77. Hofmeyr GJ, Abdel-Aleem H, Abdel-Aleem MA. Uterine massage for preventing postpartum haemorrhage. Cochrane Database Syst Rev. 2013;2013(7):Cd006431.

78. Abedi P, Jahanfar S, Namvar F, Lee J. Breastfeeding or nipple stimulation for reducing postpartum haemorrhage in the third stage of labour. Cochrane Database Syst Rev. 2016;2016(1):Cd010845.
79. Queensland Clinical Guidelines. Primary postpartum haemorrhage (PPH) Australia: Queensland Health; 2024 [Available from: https://www.health.qld.gov.au/__data/assets/pdf_file/0015/140136/g-pph.pdf.
80. WHO recommendations on postnatal care of the mother and newborn Geneva:: World Health Organization; 2013 [Available from: http://apps.who.int/iris/bitstream/10665/97603/1/9789241506649_eng.