Minymaku Kutju Tjukurpa
Women's Business Manual

7th edition
e-version reprinted 2025

Minymaku Kutju Tjukurpa Women's Business Manual

for remote and rural practice

Supporting clinical practice in the bush

7th edition
Reprinted with minor corrections
V1.01 - includes corrections as of November 2025

CARPA
Central Australian Rural Practitioners Association Inc

Flinders University

RPHCM
Remote Primary Health Care Manuals

CENTRAL AUSTRALIAN ABORIGINAL CONGRESS ABORIGINAL CORPORATION

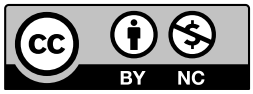
CRANA plus
improving remote health

Alice Springs, 2022 reprinted 2025

Minymaku Kutju Tjukurpa
Women's Business Manual

7th edition
Standard Treatment Manual for Women's Business in remote and Aboriginal health services in central and northern Australia

***Minymaku Kutju Tjukurpa*: 'Women Only Story'**



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History of the Women's Business Manual

The *Minymaku Kutju Tjukurpa Women's Business Manual* contains evidence-based protocols to help manage the health of Aboriginal and Torres Strait Islander women in remote Australia.

The production of a manual for women's business respects the wishes of Aboriginal women to keep women's health private and separate from other health problems. The manual contains information that Aboriginal women regard as sensitive and private.

The manual was originally produced by Congress Alukura under its umbrella organisation, Central Australian Aboriginal Congress. Central Australian Aboriginal Congress was established in 1973 and has grown to be one of the largest and oldest Aboriginal community-controlled health services in the Northern Territory. Congress Alukura is a health service for the Aboriginal women of Central Australia, it provides a community-controlled women's health and maternity care service and aims to support the Grandmother's Law in health and birthing. Cultural guidance and advice is provided by the Alukura Cultural Advisory Council.

Explanation of the cover painting

Pitjantjatjara

Tjana inma walytja pakara atunymankunytjikitjangku

Nyangatja inma. Inma tjuta nyangatja, inma ngura walytja-walytja kamiku ngura, kamiku tjamuku ngura. Tjana inma nyangatja minyma tjutangku atunymankunytjikitjangku. Tjana inma walytja pakara atunymankunytjikitjangku manta kanyintjikitjangku. Minyma tjutangku inma kumpilpa, wati tjutangku nyakunytjawiya. Minyma tjutangku kutju kanyini munuya kuwari pakara pakara.

Nyangatja minyma tjuta nyinanyi, Minyma tjuta nyinanyi nyangatja, ngura tjukuritja tjuta kanyintjikitjangku atunymankunytjikitjangku manta walytjangka.

Nyangatja Yangkuwiku.

English translation

They dance the songs to protect their country

This painting is about traditional music. Many traditional songs are represented from our grandmother's and our grandfather's country. Women sing these to maintain their continuity. They dance the songs to protect their country and keep the land safe. They dance out of sight, men never see them. It's women who keep their tradition, and today they dance and dance.

Here are the women, right here in this painting, traditional owners looking after their country and maintaining their ancestor's land.

This is Yangkuwi's.

Remote Primary Health Care Manuals logo

The RPHCM logo, developed by Margie Lankin, tells this story:

The people out remote, where they use the manuals, are coming into their health service. They are being seen from one of the manuals… desert rose, the colours of the petals. The people sitting around are people who use the manuals – men and women. People who are working for Aboriginal health… doctors and nurses and health workers. Messages are being sent out to the community from the clinic, from the people, to come in to the clinic to be seen. Messages about better health outcomes. People are walking out with better plans, better health, better health outcomes.

About this manual The seventh edition of the *Minymaku Kutju Tjukurpa Women's Business Manual* (*WBM*) has been produced as part of the suite of Remote Primary Health Care Manuals, through a collaboration between Central Australian Aboriginal Congress, the Central Australian Rural Practitioners Association, CRANA*plus* and Flinders University. The other manuals in the suite are the *CARPA Standard Treatment Manual* (*STM*), the *Clinical Procedures Manual for remote and rural practice* (*CPM*), and the *Medicines Book for Aboriginal and Torres Strait Islander Health Practitioners (Medicines Book).*

In order to avoid unnecessary duplication between the manuals, the *STM* is cross-referenced throughout the *WBM*.
The style of the manual uses short directives without explanation — 'Check ...', 'Take blood ...', 'Give ...'. In any health interaction the rights of the woman must be remembered. As a part of health care provision a woman has the right to:

- Determine what medical treatment she chooses to accept or not accept
- Be given easily understandable explanations, in her first language, about her specific health problem, any proposed treatments or procedures, and the results of any tests performed
- Have access to all health information about herself or her children
- Have her privacy respected, be treated with respect and dignity, and know that all her health information is confidential.

Your input

Feedback is an essential component of keeping the manuals 'by the users for the users'. Please submit your suggestions and comments via the online feedback form at www.remotephcmanuals.com.au

Reprint of 7th edition with minor corrections

Corrections to text or graphics are highlighted in yellow and accompanied by a warning symbol and date.

Acknowledgements

This manual was produced with funding from the Australian Government Department of Health. The Remote Primary Health Care Manuals are a Joint Venture partnership between Central Australian Rural Practitioners Association, Central Australian Aboriginal Congress, CRANA*plus*, and Flinders University, representatives of each organisation provided governance oversight of the project. As the agent of the Joint Venture agreement between these partners, project management for the revision was provided by Flinders University. Oversight of the review process was provided by the Remote Primary Health Care Manuals Editorial Committee.

Contributors

Thank you to the practitioners, from all over Australia, who volunteered their time and expertise to ensure the manual remains evidence-based, relevant, practical and user-friendly. More information about the review process and a list of the editorial committee members, project team members and the primary and secondary reviewers who contributed to the review of this edition can be found at http://www.remotephcmanuals.com.au/home.html

Using the Remote Primary Health Care Manuals (RPHCM)

The Remote Primary Health Care Manuals (RPHCM) are intended for use by trained health professionals including ATSIHPs, nurses and doctors. This manual is not intended to be a layperson's manual.

The manuals are designed to be used primarily in remote (largely Aboriginal and Torres Strait Islander) communities. The RPHCM support a cycle of care that incorporates collaborative practice, shared care, and patient recall and follow-up. Use of the manual also facilitates standardised pharmacy imprest lists and quality assurance.

Use of the RPHCM are not intended to replace clinical judgement, expertise or appropriate referral. They do not support practitioners to work beyond their level of competence or confidence, or outside their scope of practice or health service policies. Health professionals must work within their scope of practice when using the RPHCM. The supply of medicines recommended in the manual must occur within the constraints of organisational polices and jurisdictional drugs and poisons legislation. Safe practice requires that practitioners who are not sure what they are dealing with, talk with someone more experienced or skilled.

Following protocols in the RPHCM does not remove the need to complete normally accepted practices (even if unstated) such as:

- Observing privacy and confidentiality
- Getting informed consent
- Discussing procedures and treatment options with patients and/or their carers
- Discussing medicines, including side effects and the need to complete the whole course of treatment
- Actively involving parents and/or carers in the care and treatment of children
- Recording history, observations, findings and actions in the file notes

When options are given they are listed in order of preference. Only move down the list if earlier options are not available, or not acceptable to person or their carer.

Where appropriate, practitioners should discuss with the person the impact of a diagnosis on their ability to hold an unconditional driver's license.
Supporting resources for protocols are available from the Remote Primary Health Care Manuals website www.remotephcmanuals.com.au

Terms

Aboriginal
Due to space restrictions in this manual the term Aboriginal is used to mean both Aboriginal and Torres Strait Islander Australians. We use this term respectfully in recognition of the preferred term by most people living in the area this manual was produced for. We apologise for any offence it may cause.

Abbreviations
Abbreviations and acronyms may be used without explanation. There is an abbreviation list which includes acronyms.

Urgent medical consult
Medical advice must be sought as soon as possible.

Medical consult
A medical consult involves seeking advice and/or authorisation for treatment from a doctor, appropriately qualified nurse practitioner, midwife or specialist. It occurs while the patient is present and may be in person or by telehealth, eg phone, radio, videoconference.

Medical follow-up
A medical follow-up is an assessment of the patient by a doctor, appropriately qualified nurse practitioner, midwife, or specialist. It would usually involve making an appointment for the person to return to the clinic or visit the practitioner at a future time.

Medicines
Medicines are named for their active ingredients. Where a brand name for a medicine or other product is used it is in italics, and usually in brackets. The mention of specific products does not imply that they are endorsed or recommended in preference to others of a similar nature that are not mentioned.

Supporting resources
- Remote Area Health Corps Introduction to remote nursing scope of practice e-learning module
- Austroads Assessing fitness to drive resources

Cultural tips

To be effective, health care must occur in a culturally safe/secure environment with practitioners who are culturally aware and competent. See Cultural safety for more information. Learn all you can about the local culture

Always be respectful and carefully consider the following

Cultural beliefs

- Traditional concepts and understandings around health and healing remain strong in Aboriginal communities
- Use of traditional healers and traditional medicine is common. It is very important to acknowledge, respect and listen to community members regarding their practices

Effective communication

- English can be a second or third language for Aboriginal Australians — always ask if person would like an interpreter to assist
- Don't assume that conversations conducted in English have the same meaning for the practitioner and the patient
- Hearing problems are common and can make communication difficult
- While efforts to learn the local language are usually appreciated, don't try to use a language learnt in another community
- Be aware of non-verbal body language and gestures — pointing, hand signals, eye contact. Meanings may differ between cultures

When asking questions

- Direct questions can be considered rude
- Only ask one question at a time and allow person time to consider it. Person may be thinking in their own language before responding
- Check that you have understood what the person has told you
- Person may bring along a relative or friend
- Avoid double negatives. Example: 'You don't do nothing like that, do you'
- Ready agreement can be a sign of misunderstanding, or courtesy
- Silence is often OK, give person plenty of time to answer. But remember that silence can also mean misunderstanding, or that practitioner is on culturally unsafe ground

Loss and grief

- Aboriginal communities may follow these practices after a death
  - Deceased person's name should not be spoken
  - Special rituals, such as smoking deceased person's house and work, or the clinic
  - Certain relatives of the deceased may choose not to speak
  - Relatives of the deceased may live outside the community to mourn
  - In some communities 'sorry business' (grieving) involves self-inflicted injury (sorry cuts), family fighting (payback), wailing, silence

Looking after women's health

In traditional Aboriginal Law, women's health and birthing are sacred and strictly women's business. Traditionally, older Aboriginal women looked after women's business and were responsible for teaching younger women

If the woman agrees, it can be helpful to involve in clinic visits

- A female Aboriginal or Torres Strait Islander Health Practitioner (ATSIHP) or Aboriginal Community Worker (ACW), or Strong Women, Strong Babies, Strong Culture (SWSBSC) worker, or other female community practitioners or workers
- A senior community woman, grandmother or family member. They should be of the right skin group, as required by Aboriginal Law

Health staff can learn about skin groups and other cultural practices by talking to Aboriginal staff in their community or health service, by visiting one of the following organisations, or as advised by their community

- Local organisations — Land Council, language centre, women's centre, health advisory group, interpreter service
- Regional services — Institute for Aboriginal Development (Alice Springs), NPY Women's Council, Tangentyere Council, Banatjarl Strongbala Wumin Grup (Katherine), Dhimurria Aboriginal Corporation (Nhulunbuy)

Aboriginal women's cultural attitudes to pregnancy, birth, contraception, and other aspects of women's health vary and continue to evolve. Cultural practices can differ from the values and attitudes of the clinician they are working with. By being aware of these differences, you show respect for Aboriginal women's choices and knowledge, allow for full and open consultation and may get better results in clinical care. Be careful not to impose your own views

Try to offer Aboriginal women a consultation with a female clinician for women's business. Remote health clinics should have a separate room only used for women's business or if the clinic is too small, a room that is specified as a woman's health room on certain days of the week

- Try to make it quiet, private, and self-contained
- Women should be able to enter the room without being seen from the main waiting area
- The room needs at least an examination couch or a bed with a step stool, light, sink with hot and cold water, and private access to a toilet and shower. Put a screen around the couch or bed for added privacy
- Have equipment in this room for health checks, health education, birth, and newborn resuscitation. Keep a small supply of medicines used to treat women's problems, so you can finish a consultation without leaving the room

Other sections of the manual consider cultural aspects of women's health issues in greater depth. Reading these will provide a more comprehensive overview — Pregnancy (page 93), Labour and birth (page 172), Postnatal care (page 209), Gynaecology (page 276), Infertility (page 306)

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1. Emergencies

2. Pregnancy

3. Labour and Birth

4. Postnatal

5. Sexual Health

6. Gynaecology

7. Contraception

8. Reference section

1. Emergencies

Birth and resuscitation equipment

General equipment — mother and baby

- Good light
- Clock with second hand
- BP machine, stethoscope, thermometer (axilla)
- Personal protective equipment (PPE)
- Lots of blueys, spare sheets
- Tourniquet, tape
- Blood specimen tubes — EDTA, plain
- Syringes 1mL, 2mL, 5mL, 10mL × 5 each and needles 19–26G
- IV cannulas 14–24G
- IV giving sets (blood/fluid pump sets), bungs, extension tubing, dressings
- Intraosseous needle device, intraosseous needles, 15mm (baby), 25mm (adult), 45mm (obese)
- Nasogastric tubes 5Fr, 6Fr, 8Fr
- Normal saline

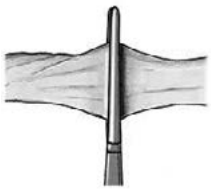


Figure 1.1

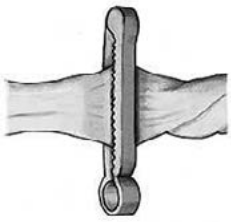


Figure 1.2

Figure 1.3

Birthing pack

- 2 sterile metal clamps with ratchets and grazed ends — for clamping cord — Figure 1.1
- 2 plastic cord clamps and 2 spares in case first break — Figure 1.2
- Scissors
  - Sterile blunt-ended scissors — for cutting cord
  - Sterile episiotomy scissors — curved, blunt-ended — Figure 1.3
  - Sterile long-handled scissors — at least 15cm (for removing cervical suture/tape)
- Forceps
  - Sponge holding forceps for membranes — Figure 1.4
  - Sterile sponge forceps — at least 15cm (for removing cervical suture/tape)
- Sterile Sims' speculum (for breech birth) — Figure 1.5

Figure 1.4

Figure 1.5

- Sterile duck bill speculum (for breech birth, removing cervical suture/tape) — Figure 1.6
- Urinary catheter equipment
- Kidney dish for placenta
- Equipment for taking cord blood
  - Kidney dish
  - Syringe
  - EDTA and plain tube
- Suture materials
- Small combine dressings
- Sterile lubricant
- Wraps for baby — see Keeping baby warm after birth (page 203)
- Thick clear plastic bag — if baby thought to be preterm or low birth weight
- Baby gown
- Name bands for baby × 4
- Plastic bucket with lid or plastic bags for placenta — family may take it
- Birth registration forms

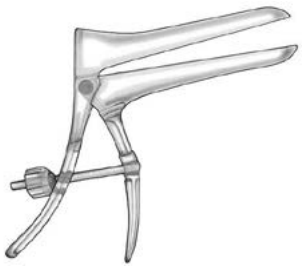


Figure 1.6

Medicines

- See Medicines for women's health emergencies (page 379)

Newborn Resuscitation

- Emergency trolley
- Laminated copy of newborn resuscitation flowchart
- Warm towels and baby wraps

Airway and breathing equipment

- Oxygen/medical air with flow meter (flow rates up to 10L/min)
- Oxygen saturation monitor (oximeter) with infant probe
- Infant mask and oxygen tubing. Can used cupped hand if not available
- Resuscitation bag-valve-mask, sizes 0, 00 — assemble and check before birth
- Mechanical suction (low pressure if possible) and tubing
- Suction catheters, sizes 8Fr, 10Fr, 12Fr

Intubation — if skilled in advanced newborn resuscitation

- Laryngoscope with straight blades, No. 0, No. 1 — extra bulbs and batteries
- Endotracheal tubes 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, and tape for securing
- Stylette or introducer

Resuscitation Medicines — under medical advice

- Adrenaline (epinephrine) 1:10,000 (0.1mg/mL)
- Normal saline 30mL
- Glucose 10%
- Glucose gel
- Water for injection 5mL

Resuscitation reference table

This table must be used with appropriate protocols and medical consults.
It is intended as a guide only

Age	Weight (kg)	Airway			Defibrillation	Fluid		Oxygen
		LMA size	ET tube size	ET tube depth of insertion	Biphasic	Bolus IV fluid Normal saline	Maintenance IV fluid Saline 0.45% with glucose 2.5%	Bag and mask
		1. Less than 5kg 2. 5–24kg 3. 25–49kg 4. 50–70kg 5. 71kg and over	(Age ÷ 4) + 4 OR width of fifth fingernail		Adult – 200J Child – 4J/kg and **medical consult**	Newborn – 10mL/kg Child – 20mL/kg Adult –1000mL	0–10kg – give 4mL/kg/hr Over 10kgs – add 2mL/kg/hr up to 20kg Over 20kg – add 1mL/kg/hr	
			ID (mm)	cm	Joules	mL	mL/hr	L/min
Under 3 months	2kg	1	2.5 uncuffed	9	8	20	8	8
	3.5kg	1	3 uncuffed	9	14	70	14	8
3 months	6kg	2	3.5 uncuffed	9	24	120	24	8
6 months	8kg	2	4 uncuffed	11.5	32	160	32	8
1 year	10kg	2	4 uncuffed	12	40	200	40	8
2 years	12kg	2	4 uncuffed	13	48	240	44	10
3 years	14kg	2	4 uncuffed	13.5	56	280	48	10
4 years	15kg	2	5 uncuffed	14	60	300	50	10
6 years	20kg	2	5 uncuffed	15	80	400	60	10
8 years	25kg	3	6 uncuffed	16	100	500	65	10
10 years	30kg	3	6 uncuffed	17	120	600	70	10
12 years	40kg	3	6 cuffed	18	160	800	80	10
14 years	50kg	4	7 cuffed	18	200	1000	90	10
Adult	65kg and over	4 71+kg 5	7 cuffed 90+kg 8 cuffed	18	200	1000	110	15

Medicines

Highlighted text updated June 2024

Age	Weight (kg)	Adrenaline (epinephrine)	Adrenaline (epinephrine)	Amiodarone	Atropine	Glucose	Midazolam	Morphine
		IV/intraosseous	IM	IV/intraosseous	IV/intraosseous	IV	IV/intraosseous	IV
		1:10,000 (1mg/10mL) VF, pulseless VT, asytole	Under 1 yr – 1:10,000 (1mg/10mL) 1 yr and over – 1:1,000 (1mg/1mL) Anaphylaxis	150mg/3mL VF, pulseless VT If conscious – **medical consult**	0.6mg/mL Symptomatic slow heart rate (bradyarrythmia)	Under 10 yr – 10% 10 yr and over – 50% Low BGL	5mg/1mL Fits	10mg/1mL Pain relief
		Child – 0.01mg/kg Adult – 1mg	Child – 0.01mg/kg Adult – 0.5mg	Child – 5mg/kg Adult – 300mg	Child – 0.02mg/kg Adult – 1mg boluses (up to 3mg total)	Child – 5mL/kg 10% Over 10 yr – 50mL 50%.	Child – 0.15mg/kg. Adult – titrate to 5mg	Child – 0.1mg/kg Adult – 0.5–2.5mg
		Undiluted Not shockable – immediately Shockable – after 2nd shock. Then every 2nd loop	Undiluted Deep IM upper outer thigh. Give every 5 min until improves Use different injection sites	Undiluted After 3rd shock. Slow IV push THEN 20mL flush with glucose 5% or sodium chloride 0.9%	Undiluted Give every 5 minutes until desired heart rate *OR* max dose.	Undiluted Repeat if needed.	Diluted in normal saline to 1mg/1mL (5mL) Give slowly over 2 min Titrate to clinical response	Diluted in normal saline to 1mg/1mL Give every 3–5 min Titrate to clinical response
		mL	mL	mL	mL	mL	mL at 1mg/mL	mL at 1mg/mL
Under 3 months	2kg	0.2	0.2 (1:10,000)	0.2	0.1	10 (10%)	0.3	0.2
	3.5kg	0.4	0.4 (1:10,000)	0.4	0.1	20 (10%)	0.5	0.4
3 months	6kg	0.6	0.6 (1:10,000)	0.6	0.2	30 (10%)	1	0.6
6 months	8kg	0.8	0.8 (1:10,000)	0.8	0.3	40 (10%)	1.2	0.8
1 year	10kg	1	0.1 (1:1,000)	1	0.3	50 (10%)	1.5	1
2 years	12kg	1.2	0.12 (1:1,000)	1.2	0.4	60 (10%)	1.8	1.2
3 years	14kg	1.4	0.14 (1:1,000)	1.4	0.5	70 (10%)	2.1	1.4
4 years	15kg	1.5	0.15 (1:1,000)	1.5	0.5	75 (10%)	2.25	1.5
6 years	20kg	2	0.2 (1:1,000)	2	0.7	100 (10%)	3	2
8 years	25kg	2.5	0.25 (1:1,000)	2.5	0.8	125 (10%)	3.75	2.5
10 years	30kg	3	0.3 (1:1,000)	3	1	50 (50%)	4.5	3
12 years	40kg	4	0.4 (1:1,000)	4	1.3	50 (50%)	5	4
14 years	50kg	5	0.5 (1:1,000)	5	1.7	50 (50%)	5	5
Adult	65kg and over	10	0.5 (1:1,000)	6	1.7	50 (50%)	5	up to 10

Newborn resuscitation

- Most newborn babies don't need resuscitation — but always be ready
- If resuscitation needed — most babies only need **Airway** and **Breathing support**. Performed quickly these can prevent need for circulation support
- **Bag-valve-mask resuscitation almost always successful** if performed correctly — can be done for several hours while waiting to send to hospital
- Keep baby warm (page 203) and dry but **do not** overheat — can depress respiration

What you need

- Newborn resuscitation equipment (page 2)

Steps of resuscitation

- **D – Dry** and stimulate to get a response
- **R – Response** from baby - rapid assessment of breathing effort, heart rate, tone
- **S – Send** for help
- **A – Airway** — open and clear, sniffing or neutral position
- **B – Breathing** — positive pressure bag-valve-mask ventilation
- **C – Circulation** — chest compressions while continuing ventilation
- **D – Drugs** — give **adrenaline (epinephrine)** or fluid
- Reassess breathing effort, heart rate and tone **every 30 seconds** to decide whether to progress to next step

Improvement in baby's condition are indicated by

- Spontaneous breathing
- Increasing heart rate
- Improving tone

Do — before birth

- Call for help
- Warm room — close doors and windows to stop drafts or open doors and windows if air conditioner can't be turned off
- Get equipment (page 2) ready and check it is working
- Identify flat surface for assessment and resuscitation if needed. Cover with towels if surface cold
- Try to get as much antenatal information as possible

Do — at birth

D – Dry stimulate baby with warm towel. Discard wet towel and cover baby in a clean warm towel. Cover baby's head

R – Response — Rapid assessment

- Breathing or crying
- Heart rate more than 100 beats/min — listen with stethoscope
- Good muscle tone

If answer is NO to ANY sign in rapid assessment — baby needs more help

- Have helper do **urgent medical consult**
  - If doctor not on site — stay on phone
- Follow the steps below or see — Newborn resuscitation flowchart (page 13)
  - Assess breathing effort, heart rate and tone every 30 seconds
  - Use results to guide progress through following steps or flowchart

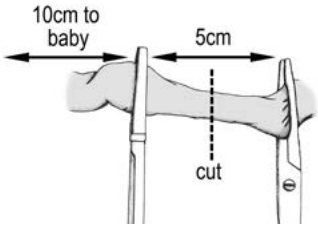


Figure 1.7

If answer YES to ALL signs in rapid assessment — see Newborn care (page 199)

Clamp and cut cord if needed

- Put 2 metal clamps on cord 5cm apart and at least 10cm from baby's abdomen — Figure 1.7
- Cut cord **between** the 2 clamps with sterile blunt-end scissors
- Do not take clamps off after cutting

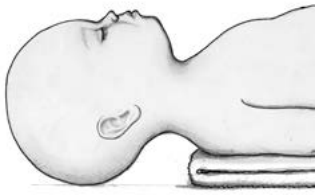


Figure 1.8

A – Airway

Establish an airway

- Put baby on flat, dry surface
- Put baby's head in sniffing/neutral position to open airway — Figure 1.8
  - Small towel under shoulders helps maintain position
  - Do not tip head forward — Figure 1.9 or too far back — Figure 1.10

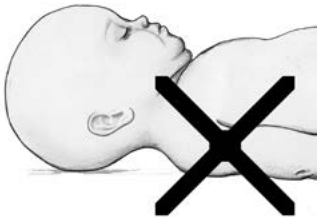


Figure 1.9

Clear airway as needed

- If obvious signs of obstruction gently suction mouth then nose with 10–12F catheter for 5 seconds
- Reposition baby's head to open airway

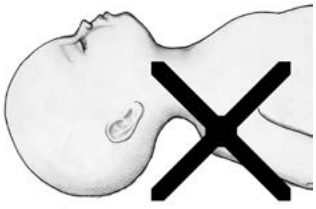


Figure 1.10

- Recheck breathing effort, heart rate, tone
- Continue to follow steps below or see — Newborn resuscitation flowchart (page 13)

B – Breathing

Ventilation is the most effective action in newborn resuscitation — make sure assisted ventilation effective before continuing to circulation or see — Newborn resuscitation flowchart (page 13)

If baby is not breathing effectively — bag-valve-mask ventilation at 40–60 breaths/min

- Start with room air for both term and preterm babies
- Check baby's head in sniffing/neutral position — Figure 1.8
- Mask should cover nose and mouth — Figure 1.11
- Need good seal between mask and face — Figure 1.12. Check for chest wall movement with each inflation — best indicator that mask is sealed and lungs are being inflated
- Put O_2 sats probe on baby's right hand or wrist
- After 30 seconds — check breathing effort, heart rate, tone
- If no improvement after 30 seconds of effective ventilation — change from room air to oxygen at 10L/min

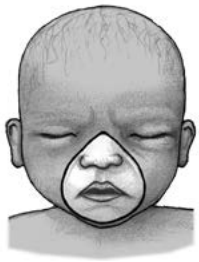


Figure 1.11

If chest not rising with each squeeze of bag — check for

- Poor seal - reapply mask to face to make better seal
- Blocked airway
  - Reposition head
  - If obvious signs of obstruction — gently suction mouth then nose with 10–12F catheter for 5 seconds
- Enough inflation pressure being used - squeeze bag more firmly to get an easy rise and fall of chest

Figure 1.12

C – Circulation

If heart rate **less than 60 beats/min** after 30 seconds of effective ventilation — continue bag-valve-mask ventilation with oxygen at 10L/min and start **chest compressions**

Figure 1.13

- Use 2 thumbs on lower third of sternum with fingers around chest — Figure 1.13 — best for 2-person resuscitation
  - Thumbs side-by-side or overlap for small baby

OR 2 fingers along sternum at right angle to chest — Figure 1.14 — best for single person resuscitation

- Can hold mask on with other hand — tuck bag under same arm

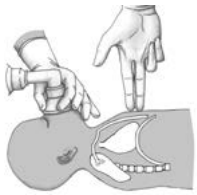


Figure 1.14

- Depth — 2–3cm (⅓ depth of chest) — Figure 1.15
- Ratio — 3 compressions to 1 breath
- Rate — 90 compressions + 30 breaths/min
- Leave space for each breath
- **Use this rhythm in a 2 second cycle**
  - One-and-two-and-three-and-breath-and-one-and-two-and-three-and-breath-and… — Figure 1.16

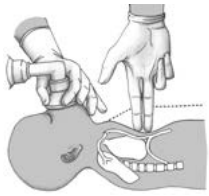


Figure 1.15

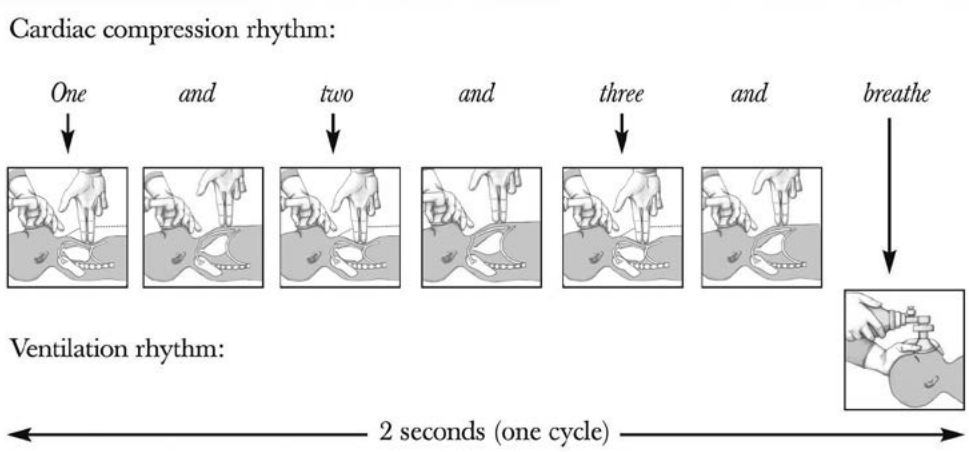


Figure 1.16

If heart rate 60–100 beats/min — continue bag-valve-mask ventilation

- After 30 seconds — **check breathing effort, heart rate, tone**. Continue to follow steps below or see — Newborn resuscitation flowchart (page 13)

If heart rate **more than 100 beats/min**, breathing **40 breaths/min or more and tone improving** — put baby on mother's chest skin-to-skin

- If central cyanosis — give free flow oxygen
- See — Newborn care (page 199)

If baby not improving

If heart rate less than 60 beats/min — usually ineffective ventilation (not enough oxygen)

- **Continue bag-valve-mask ventilation and chest compressions**
- **Review resuscitation technique**
  - Is chest movement adequate — recheck seal, airway, inflation pressure
  - Check **oxygen** is connected to bag-valve-mask at 10L/min
  - Are chest compressions ⅓ depth of chest
  - Are chest compressions and ventilation well-coordinated

D – Drugs

- If heart rate still less than 60 beats/min — continue chest compressions with bag-valve-mask ventilation
- **Medical consult**
- Give adrenaline (epinephrine) and fluids as directed by doctor
  - Be ready to put in IV cannula or intraosseous needle as directed by doctor
  - **Adrenaline (epinephrine)** IV/intraosseous 0.01-0.03mg/kg (0.3mL/kg of 1:10,000 solution) followed by a small **normal saline** flush every 3-5 minutes — repeat every 3-5 minutes if heart rate less than 60 beats/min despite effective ventilation and chest compressions

Ongoing resuscitation

- If prolonged bag-valve-mask ventilation needed — get helper to put in **nasogastric** tube, if skilled
  - Stop ventilation for as short a time as possible
  - Suction gastric contents, secure tube, leave tube on free drainage (unplugged)
  - Reposition baby's head and restart ventilation
- If no heartbeat after 15 minutes of resuscitation — **medical consult** about stopping resuscitation — outcome for baby is always poor
- Talk with mother and family and explain situation

Pulse oximetry

- Use O_2 sats probe, if available
  - When starting positive pressure bag-valve-mask ventilation
  - If giving oxygen
  - If persistent cyanosis suspected
- Put probe on baby's right hand or wrist
- See — Table 1.1 for target O_2 sats
  - O_2 sats for normal newborns can take up to 10 minutes to rise above 90%
- If O_2 sats reach 90% — gradually reduce amount of oxygen being given
- If O_2 sats falling or less than 90% after 10 minutes — **specialist consult**

Table 1.1 Target oxygen saturations for newborns

Time from birth (minutes)	O_2 sats (%)
1	60–70
2	65–85
3	70–90
4	75–90
5	80–90
10	85–90

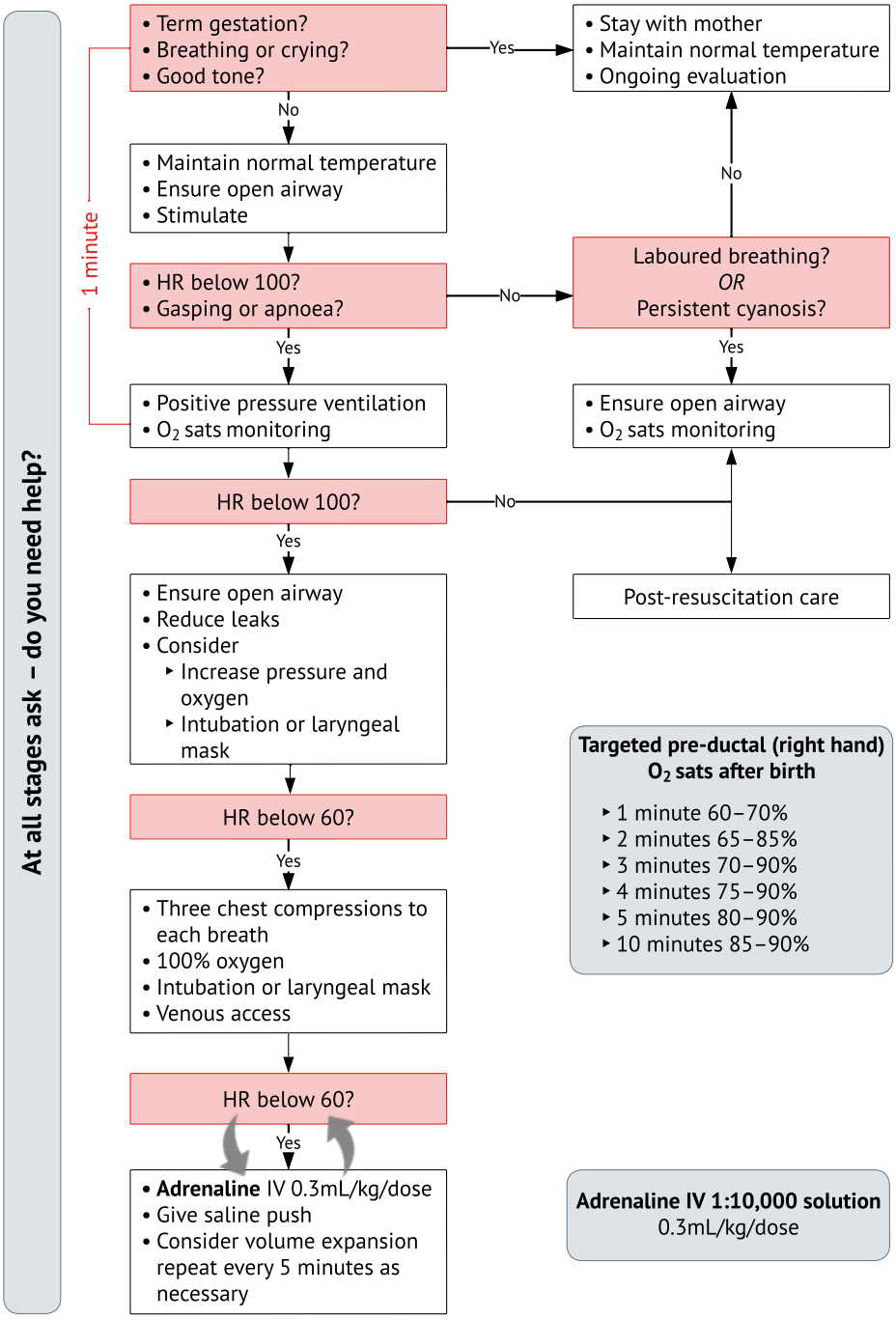
Post-resuscitation care

Babies who need full resuscitation have been severely stressed — monitor closely while waiting for evacuation

- See — Newborn care (page 199) for monitoring and ongoing care
- Continue **oxygen** unless directed by doctor to stop
- Maintain baby's temperature between 36.5 and 37.5°C — see Keeping baby warm after birth (page 203)
- Check baby's blood glucose level (page 200)
- Put in nasogastric tube, if skilled and directed by doctor
  - Size 6F for very small babies, size 8F for bigger babies
  - Leave tube on free drainage (unplugged) to let out air in stomach (from bag-valve-mask ventilation)
- Baby may need fluid or medicines — be ready to put in IV cannula or intraosseous needle as directed by doctor

Newborn resuscitation flowchart

Flowchart 1.1



Early recognition of sepsis

Risk Factors for Sepsis

- Previous sepsis
- Re-presentation unwell within 48 hours
- Chronic illness especially diabetes
- Immunocompromised (weak immune system)
- Alcohol misuse
- Recent surgery or implantable device/valve

Red Flags — Urgent Medical Consult

- **Sepsis — signs and symptoms can include**
  - High or low temperature
  - Fast breathing
  - Fast pulse
  - Low BP or dizziness
  - Confusion and/or agitation

Do not assume no chest pain means no heart problems

Early use of antibiotics is critical in sepsis — early medical consult

- Where available follow local sepsis pathway
- Antibiotic choice based on regional sensitivities and likely body system
- Take blood and urine for culture before giving antibiotics where possible — for adults collect 2 sets of cultures from 2 different sites
- If allergy to penicillin — **medical consult** before giving antibiotics
- If unknown or undifferentiated sepsis — give IV **gentamicin, flucloxacillin, ceftriaxone** first *AND* if available **vancomycin** as a single slow infusion — dose and infusion rate (page 364)
- After treatment — re-assess for response
- Repeat Remote Early Warning Signs (REWS) observations often to detect deterioration
  - Every 30 minutes if medium risk
  - Every 15 minutes if high risk

Adult assessment

- Person looks unwell or presents with acute problem
- Calculate Remote Early Warning Score (REWS) using appropriate table — Table 1.2

OR if woman more than 20 weeks pregnant — Table 1.3

- Score each line individually. Then add scores for REWS

THEN follow Flowchart 1.2 for management

Beta-blockers reduce heart rate and can confuse REWS score

Table 1.2 Adult REWS (13 years and over)

13 years and over — remote early warning score (REWS)							
REWS score	3	2	1	0	1	2	3
Consciousness AVPU				Alert	Voice		Pain Unresponsive
RR	8 or less			9–20	21–30	31–35	36 or more
O_2 sats (%)	84 or less	85–89	90–92	93 or more			
Pulse	40 or less		41–50	51–100	101–110	111–130	131 or more
Systolic BP (mmHg)	89 or less	90–99		100–169	170–179	180–199	200 or more
Temperature (°C)	34 or less	34.1–35.0	35.1–36.0	36.1–37.9	38.0–38.5	38.6–39.5	39.6 or more

Table 1.3 Obstetric REWS (more than 20 weeks pregnant)

Obstetric — remote early warning score (REWS)							
REWS score	3	2	1	0	1	2	3
Consciousness AVPU				Alert	Voice		Pain Unresponsive
RR	8 or less			9–20	21-24	25–29	30 or more
Oxygen needed to keep O_2 sats 94% or more						2–4L/min	More than 4L/min
Pulse	59 or less			60–110		111–149	150 or more
Systolic BP (mmHg)	79 or less	80–89		90–139	140–149	150–159	160 or more
Diastolic BP (mmHg)				89 or less	90–-99	100–109	110 or more
Temperature (°C)	34 or less	34.1–35.0	35.1–36	36.1–37.9	38–38.5	38.6–39.5	39.6 or more

Highlighted text updated June 2024

Paediatric assessment

Do

- Assess appearance, work of breathing and circulation
- Assess level of respiratory distress — Table 1.4
  - Assess each category individually
  - Use the highest grade in any category when calculating REWS
- Calculate REWS by age — use age appropriate table
- Score each line individually.

THEN add scores for REWS

THEN follow Flowchart 1.2 for management

Table 1.4 Assessing respiratory distress — child 0–12 years

	Mild	Moderate	Severe
Airway	Stridor on exertion/crying	Some stridor at rest	Stridor at rest
Behaviour and feeding	Normal Talks in full sentences	Some irritability Difficulty talking/crying Difficulty feeding or eating	Increased irritability and/or lethargic Looks exhausted Unable to talk or cry Unable to feed or eat
Accessory muscle use	Mild intercostal recession and mild tracheal tug	Moderate intercostal recession and moderate tracheal tug Nasal flaring in infants	Marked intercostal and sternal recession and marked tracheal tug Head bobbing in infants
Other		May have brief apnoeas (stops breathing)	Gasping, grunting Very pale or cyanosis (blue) Increasingly frequent or prolonged apnoeas

Table 1.5 Paediatric REWS — 0–3 months

Paediatric 0–3 months — remote early warning score (REWS)							
REWS score	3	2	1	0	1	2	3
Consciousness AVPU				Alert	Voice		Pain Unresponsive
Respiratory distress				Normal	Mild	Moderate	Severe
RR	19 or less	20–24	25–29	30–59	60–69	70–79	80 or more
0_2 sats (%)	90 or less		91–94	95 or more			
0_2 needed — nasal prongs*				Less than 2L/min		2L/min or more	
Pulse	59 or less	60–89	90–109	110–159	160–169	170–179	180 or more
Capillary refill				Less than 2 seconds		2 seconds or more	
Temperature (°C)	33.4 or less	33.5–35.0	35.1–35.5	35.6–38.0	38.1–38.5	38.6–39.0	39.1 or more

*If using mask — 4L/min

Table 1.6 Paediatric REWS — 4–11 months

Paediatric 4–11 months — remote early warning score (REWS)							
REWS score	3	2	1	0	1	2	3
Consciousness AVPU				Alert	Voice		Pain Unresponsive
Respiratory distress				Normal	Mild	Moderate	Severe
RR	14 or less	15–19	20–29	30–44	45–49	50–59	60 or more
0_2 sats (%)	90 or less		91–94	95 or more			
0_2 needed — nasal prongs*				Less than 2L/min		2L/min or more	
Pulse	59 or less	60–89	90–109	110–159	160–169	170–179	180 or more
Capillary refill				Less than 2 seconds		2 seconds or more	
Temperature (°C)	33.4 or less	33.5–35.0	35.1–35.5	35.6–38.0	38.1–38.5	38.6–39.0	39.1 or more

*If using mask — 4L/min

Table 1.7 Paediatric REWS — 1–4 years

Paediatric 1–4 years — remote early warning score (REWS)							
REWS score	3	2	1	0	1	2	3
Consciousness AVPU				Alert	Voice		Pain Unresponsive
Respiratory distress				Normal	Mild	Moderate	Severe
RR	11 or less	12–16	17–19	20–34	35–39	40–59	60 or more
0_2 sats (%)	90 or less		91–94	95 or more			
0_2 needed — nasal prongs*				Less than 2L/min		2L/min or more	
Pulse	59 or less	60–89	90–109	110–139	140–149	150–170	171 or more
Capillary refill				Less than 2 seconds		2 seconds or more	
Temperature (°C)	33.4 or less	33.5–35.0	35.1–35.5	35.6–38.0	38.1–38.5	38.6–39.0	39.1 or more

*If using mask — 4L/min

Table 1.8 Paediatric REWS — 5–12 years

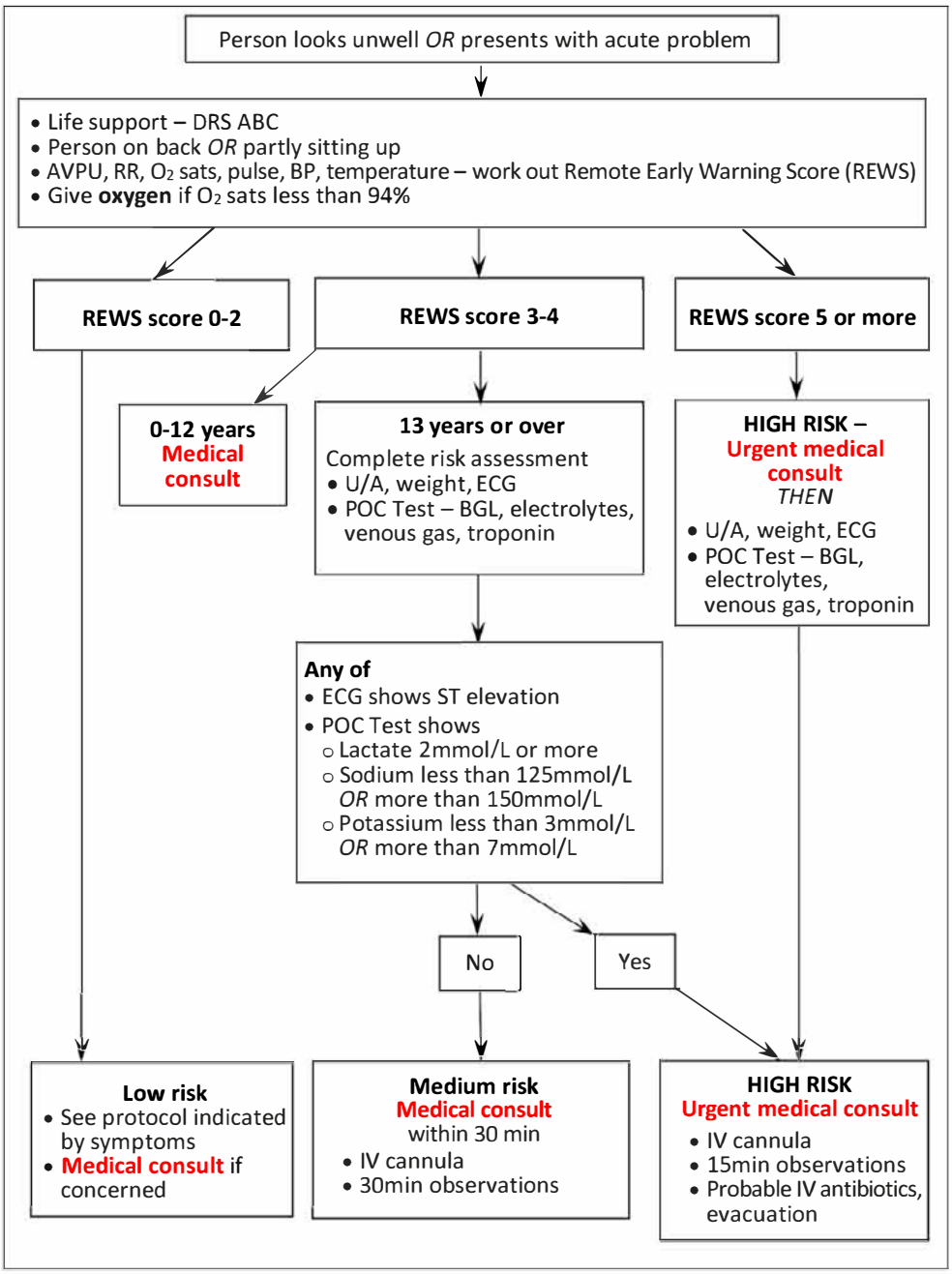
Paediatric 5–12 years — remote early warning score (REWS)							
REWS score	3	2	1	0	1	2	3
Consciousness AVPU				Alert	Voice		Pain Unresponsive
Respiratory distress				Normal	Mild	Moderate	Severe
RR	9 or less	10–14	15–19	20–29	30–34	35–49	50 or more
0_2 sats (%)	90 or less		91–94	95 or more			
0_2 needed — nasal prongs*				Less than 2L/min		2L/min or more	
Pulse	59 or less	60–69	70–79	80–120	121–129	130–150	151 or more
Capillary refill				Less than 2 seconds		2 seconds or more	
Temperature (°C)	33.4 or less	33.5–35.0	35.1–35.5	35.6–38.0	38.1–38.5	38.6–39.0	39.1 or more

*If using mask — 4L/min

Management

Flowchart 1.2 Management based on risk level

Flowchart 1.2 updated June 2024



Vaginal bleeding

If bleeding very heavy (bright with large clots) *OR* signs of shock — **this is an emergency**

Do not

Do not let woman eat or drink anything — may need operation

Emergency care

Do first

- Call for help
- Lie woman on left side
- **Check for signs of shock**
  - Increased RR
  - Pulse weak and fast (more than 100bpm) or difficult to feel
  - Central capillary refill longer than 2 seconds
  - Pale, cool, moist skin
  - Restless, confused, drowsy, occasionally unconscious
  - Low BP for age or relative to person's previously recorded values
- Give **oxygen** to
  - target O_2 sats 94–98%
  - *OR* if moderate/severe COPD — 88–92%
- Put in IV cannula, largest possible
  - Give **normal saline 1L straight away**
  - If you can't get IV cannula in — put in intraosseous needle
- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- **Medical consult** about sending to hospital
  - Ask about pain relief, more IV fluids
  - Put in second IV cannula — largest possible
  - Take blood (20mL), flush with **5mL normal saline**
  - Collect blood for FBC, blood group — send in with woman
- When time, put in indwelling urinary catheter (page 327) Connect to urine drainage bag with hourly measure

Routine (normal) care or when stabilised

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- U/A, pregnancy test (page 99)
- Measure and record blood loss
  - Put pad between woman's legs. Change pad at each check. Save and weigh all pads (1g increase = 1mL loss)

Do

- Diagnose and manage cause of bleeding — Table 1.9

Table 1.9 Causes of heavy vaginal bleeding

Possible cause of bleeding	See
Not pregnant (negative urine pregnancy test), not postpartum	Abnormal vaginal bleeding in non-pregnant women (page 302)
Could be pregnant (missed period) — check urine pregnancy test *OR* Pregnant — less than 20 weeks (uterus below umbilicus) *OR* Pregnant — more than 20 weeks (uterus above umbilicus)	Bleeding in pregnancy (page 33)
Postpartum — had baby in last 24 hours	Primary postpartum haemorrhage (page 77)
Postpartum — had baby between 24 hours and 6 weeks ago	Secondary postpartum haemorrhage (page 81)

Domestic and family violence

- Can involve sexual (page 27), physical, emotional, psychological or economic abuse/ violence or behaviour that causes fear, eg threats of violence and/or stalking — can occur in person, online or by phone
- Usually directed at **intimate partner** — spouse, girlfriend, ex-partner, child. Often by a man against a woman but consider violence in all relationships
- May not be obvious. Usually happens privately
- Part of continuing and growing pattern of behaviour that may escalate — could go from emotional to physical violence
- Certain population groups are at higher risk of violence — Aboriginal women and children, pregnant women, disabled people, refugees or new arrivals, gender and sexually diverse people, the elderly
- Children who witness violence can suffer long-term effects — consider counselling and support

Domestic/family violence is a crime

- **Safety** is the first priority for person and practitioner
- **Do not** confront or accuse any likely offender. Avoid doing anything that might make them angry or violent with you, other staff, or person you are helping
- You **must know** your responsibilities under the laws in your state/ territory relating to violence against adults and children and mandatory reporting
- **If you suspect child abuse** (which includes witnessing violence) — after **medical consult** you **must report** to child protection service (STM, page 153), mandatory reporting

Consider domestic/family violence when

- Injury doesn't match story of how it happened
- Injuries to abdomen or genitals (private parts)
- Injuries are covered by clothing — breasts, abdomen, chest, unusual or hidden places on body
- Injuries when pregnant
- Treating women with gynaecological or anxiety problems
- Person often comes to clinic with injuries or vague symptoms or there are delays in seeking medical attention or doesn't want to talk about what happened
- If concerned about a child — see Child neglect, abuse and cumulative harm (STM, page 153)

Person may

- Appear nervous or ashamed and unable to communicate
- Describe person who did it as a bully or getting angry easily (people rarely use term 'domestic violence')
- Seem uncomfortable or anxious when partner present
- Be accompanied by partner who won't let them speak or stays too close
- Have symptoms of chronic stress, anxiety (STM, page 269), depression (STM, page 272)

Always

- Before involving family or other people — ask person who it is or isn't OK to talk to and who they would like as a support person
- Arrange interpreter if needed
- Believe what person tells you — listen to their story, be supportive and responsive, don't judge or blame
- Make sure you talk to person where they feel safe, alone if they want, not when highly distressed. May mean seeing person again later

If you suspect violence but person denies it

- Talk about what someone could do to be safer if it did happen
- Make it clear that violence is unacceptable. Do not criticise them or partner. Explain that this is a non-judgement space to talk
- Sometimes victim may not feel able to leave their violent home. Accept their choice

If you have serious concerns about safety of person who is refusing help

- Talk about the situation with your manager
- Report situation to the police

Ask

Questions to find out about undisclosed (not reported) domestic/family violence

Build rapport by general conversation (talking about other things) and ask about having another family member, ATSIHP or other health staff in the consult room

- Can I help you with anything today, are you worried or upset about anything
- Are you feeling OK in your body
- Do you have any pain or are you sore anywhere
- Are you worried about anything or anyone in your family

Direct non-blaming questions that won't cause shame or guilt — explain they are part of normal clinical care

- Can you tell me what happened
- How does your partner treat you. Are you having any problems
- Are you afraid of your partner — for yourself or your children
- Does your partner ever threaten to hurt you or your family

Physical and sexual violence

- Has anyone at home hit you or your children or tried to injure you or your children in any way
- Have you ever been slapped, pushed or shoved by your partner
- Have you ever been touched in a way that made you feel uncomfortable
- Has anyone ever made you do something sexual when you did not want to
- **Always** ask about strangulation — especially in intimate relationship assaults

Housing situation

- Have you got somewhere safe to stay
- Where are you staying now. Do you always live there
- Is it your house or someone else's
- Who is staying with you
- How many people live where you are staying
- Does everyone in your house get along OK
- Do you feel happy staying in the house with the people who are there

Social or emotional concerns

- Self-harm or thoughts of self-harm
- Drug and/or alcohol misuse
- Sleeping or eating problems
- Loneliness or isolation from family and friends
- Sexual problems or STIs

Check

- Calculate age appropriate REWS
  - **Adult** — AVPU, RR, O_2 sats, pulse, BP, Temp
  - **Child** (less than 13 years) — AVPU, respiratory distress, RR, O_2 sats, pulse, central capillary refill time, Temp
- Weight, BGL
- U/A, pregnancy test

Do

- Explain and check that the person understands confidentiality and that you might have to share information for mandatory reporting

Treat person's injuries (if any)

- Measure and describe injuries. Use drawings — see Numbered body and hand charts — may be needed in court
- Record in detail what person says happened and how they presented — but remember it is not your job to investigate the complaint

Call for support

- Women's shelter, police, specialist support services can give person the right legal advice — ask person if you can refer them
  - The person can talk directly to the women's shelter staff if preferred
  - If they want to report what happened to police — offer telephone and privacy. If they are unsure — ask if you or support person can ring for them

Management plan — if person stays in community

- Check they have a safe place to stay
- Record who support people are
- Make sure they know who to contact and how to get help quickly

Talk about a safety plan to avoid possible violence

- Warning signs for when violence is likely to happen
- Ways to avoid violence — getting away, having excuse to leave, safe places to go and people to be with, not being alone with violent person
- Plan for children's safety
- Talking with a relative who can discourage (help stop) attacker from violence
- Getting a restraining order or Apprehended Violence Order (AVO). Contact local police for more information

Follow-up

- Review person within 24 hours and often until crisis has passed
- Offer referrals for counselling and support
- Domestic/family violence impacts on immediate and long-term physical and emotional health. Make sure victims are offered routine health checks — Adult health check (STM, page 222) including STI check, Mental health assessment, School-aged health check (STM, page 146), Child health check (STM, page 138)

Remember if you feel upset or distressed by what you have seen or had to do. Ask for help from your manager and/or telephone counselling service

- Bush Support Services — phone 1800 805 391
- National sexual assault, domestic family violence counselling service — 1800RESPECT (1800 737 732)

Supporting resources

- Mandatory reporting of child abuse and neglect information
- Family and community safety for Aboriginal and Torres Strait Islander peoples study report

Sexual assault in adults

- Sexual assault is any sexual act without consent. Legal definitions vary in different states/territories
- You must know what is required under your state/territory legislation, including mandatory reporting requirements
- Sexual assault services will provide expert advice, even if not making a formal referral. Know your local sexual assault service contact numbers
- If under 18 years — see Child neglect, abuse and cumulative harm (STM, page 153)

Related topic — Assessing trauma — primary and secondary survey

Red Flags — Urgent Medical Consult

- Strangulation

Do first

- **Contact doctor or sexual assault service for advice — available 24 hours a day**
- Look for and manage life-threatening and major injuries straight away — urgent medical treatment always takes priority over forensic matters
- If unconscious or has condition that impairs judgement (eg under influence of drugs, intellectual disability) — **medical consult**
- Make sure victim and you are safe — **arrange evacuation. Call police if needed**
- Use same gender staff, if possible
- Ask if they want friends or family with them
  - **Be aware** person may not have told partner, family, friends
  - Consider privacy and confidentiality, especially in small community

Serious injuries

- Give urgent clinical care
  - Only clean wound areas as needed for safe urgent treatment, eg wound edges before suturing
  - If need to do vaginal or rectal exam for a serious injury before forensic exam — look carefully and document any external genito-anal injury before speculum exam
  - Use warm water or only small amount of lubricant. If lubricant used — send name of lubricant and sample in yellow top jar with person for comparison
- Give pain relief (STM, page 326) as needed
- **Medical consult** — to send to hospital

Talk with person about assault

- Believe person. Take allegation seriously and treat with dignity and respect. Acknowledge the courage it has taken to tell you about assault
  - Being **believed** is the single most important thing that contributes to a person's recovery
  - **Be aware** offenders may be family, leaders or trusted people in community
- Help person be in control of how much they have to talk
  - Only ask for details needed for initial examination and clinical care
  - Let them know they don't need to tell you all of the details of assault
  - Ask open-ended questions where possible
  - Record answers so you don't have to ask again
- Listen and hear what person is saying
  - Acknowledge their pain but don't get caught up in your own responses and emotions
  - Reassure person their feelings and reactions are normal and OK — take care not to minimise or discount them
- It is not your job to get a detailed medico-legal statement or verify accuracy of information but your notes may be used in legal proceedings — make sure they are accurate and legible
- **Do not** be judgemental or confrontational. **Do not** ask qualifying questions such as "Why were you there?", "Why did you do that?"
- **Do not** say anything that makes person feel responsible for or guilty about the assault
  - A good statement can be "It's not your fault that this happened", "You might have been vulnerable but that doesn't make you responsible"
- Make sure person understands
  - Assault can be reported at any time but forensic exam (collection of evidence) must be done as soon as possible and is **best within 72 hours**
  - State/territory legislation may mean you need to report assault to police or other agency (eg mandatory reporting of domestic/family violence in Northern Territory)
  - If no mandatory report needed — person decides whether or not to report to police
- Discuss with sexual assault service and get the person to talk with them if they can. They can help explain all of the medical, counselling and legal options and are there to support you and the person
- Assess safety — may be safety from alleged assailant or from self. Work with person to develop safety plan (page 25), if appropriate
- Promote concept of future recovery — they have survived the assault. Talk with person about what they need and how you can help them recover

Ask

- Do they want to talk to sexual assault service — tell the person sexual assault service has nothing to do with police **unless** mandatory reporting is required
  - Provides counselling and support regardless of whether or not they decide to have forensic exam
  - If forensic exam is done it can be held by the sexual assault service so that the person will have time to decide if they want to go to the police or if they want the examination results to be destroyed
- Do they want to talk to the police to report the assault. Tell person they can change their mind at any time
  - Police are the best people to take the formal statement
  - If person thinks they may take legal action, are seriously injured, or safety is not assured — strongly encourage and help to contact police as soon as possible after injuries treated

Do

Arrange forensic examination if wanted by person

- Forensic exam assists a criminal investigation by
  - Collecting physical evidence samples (eg traces of bodily fluids containing DNA) for the police
  - Thoroughly documenting injuries
- Staff without specific training in sexual assault assessment should not do forensic exam of sexual assault victim
- If no specifically trained staff available and travel declined — **specialist sexual assault service consult**
- A forensic exam does *NOT* mean that the person has to go to the police — it does mean that physical evidence can be collected quickly and stored safely allowing for the person to have time to think about what they want to do with it
- Determine where examination will take place and who will do it
  - If going to hospital — forensic exam and assessment by sexual assault service may be offered at hospital
  - If not going to hospital — refer and support to attend sexual assault service in town. Doctor will arrange appointment with most appropriate service
- **Medical consult** — talk with police (if involved) to arrange transport
  - Best travel option (eg evacuation, mail plane, road) depends on urgency of referral and availability — medical, social, safety factors all relevant

Preserving forensic evidence

- Obtain consent before collecting any specimens
- Wear gloves during any medical examinations and change between one injury and another to prevent DNA contamination
- Get advice from sexual assault service on how to collect and store preliminary specimens if needed — could include specimens before or after using toilet or removing clothing
- Advise it is best not to shower. If not possible — try not to wash areas involved in assault (eg genitals, neck if suction mark, arm if fingertip bruising)
- If oral rape or injuries — ideally don't eat, drink, clean teeth, rinse mouth until after forensic exam. Can be very difficult for person so talk with police or sexual assault service about collecting these samples if there is a delay in transfer
- If sending to town for forensic exam — get advice from **sexual assault service** about preserving evidence while waiting and during transfer
  - Depends on nature of assault, time delay, how much clinical care needed before appointment
- If available and skilled use a Preliminary Forensic Kit
  - Allows you to support the person to collect their own specimens while trying not to lose any forensic evidence
  - Means they can eat, drink and go to the bathroom while waiting for evacuation
  - Does *NOT* replace a forensic medical exam but helps when there is a delay to reach someone who is qualified to do a forensic exam

Medical check — if staying in community

- If person decides not to have forensic exam — **medical consult**
  - Doctor should talk with sexual assault service about management including routine observations. Consider emergency contraception and pregnancy test
- For social or emotional reasons may be better for person to be referred to service outside home community

Follow-up

- Review in a few days or as soon as person wants
- Be gentle but thorough. Ask about and check
  - Physical problems and symptoms
  - Injuries — oral, pelvic, genital, urinary, anorectal
  - Contraception, pregnancy
  - If positive STI test/s — see STI management (STM, page 309)
  - If STI symptoms — see relevant protocol

- Coping responses — counselling, medicines, alcohol or drug use, cigarette use
- Mood, emotional wellbeing. If anxious, depressed, not coping — see Mental health assessment and offer referral to mental health service
- Current and relevant past medical, surgical, psychiatric history
- Social factors — relationships, housing, police investigation

- 2–3 weeks after assault
  - Consider repeat STI check – man (STM, page 305), woman (page 246), young person (page 244)
  - Offer urine pregnancy test (page 99). If pregnancy test positive — talk with woman about options including termination of pregnancy (page 102)
  - Consider forensic implications of pregnancy — talk with doctor from sexual assault service
- 3 months after assault
  - Repeat bloods for syphilis, HIV, hepatitis B
  - If treatment given for positive STI results — test for reinfection

Long term follow-up

- Emotional problems may continue or get worse after sexual assault
  - Anxiety, depression, post-traumatic stress are common and can affect relationships (families, communities)
- Promote concept of recovery — plan together how this will happen
  - Consider referral to counselling, sexual assault service, mental health service, social and emotional wellbeing program

Strangulation

Always ask about this, especially in intimate relationship assaults

- Non-fatal strangulation in intimate partner violence is a risk factor for later homicide
- Late onset oedema (delayed swelling) can cause breathing obstruction up to 36 hours after strangulation

Ask

- What was used
- Loss of consciousness
- Memory difficulties
- Trouble swallowing or breathing
- Voice change
- Loss of bladder or bowel control
- Headache
- Pregnancy status

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- U/A, pregnancy test

Do

- **Medical consult** for imaging (eg CT)
- **Urgent medical consult** if
  - Difficulty swallowing or dyspnoea (difficulty breathing)
  - Stridor (loud high pitched sound when breathing in)
  - Subcutaneous emphysema (crackles under skin)
  - Irritable and you suspect hypoxic brain injury
  - Any voice change or loss of consciousness
  - External swelling, bruising, tenderness
  - Loss of laryngeal crepitus
  - Intoxicated
- Even if asymptomatic, late onset oedema (delayed swelling) can cause breathing obstruction up to 36 hours after strangulation. If person not going to hospital — review regularly and have someone trusted watch them for this time
- If no immediate signs — wait at least 6 hours after strangulation before deciding person doesn't need to go to hospital

Bleeding in pregnancy

Vaginal bleeding in pregnancy is not normal — urgent medical consult
If bleeding very heavy (bright with large clots) OR signs of shock — this is an emergency

Problems

- Even a small amount of visible blood loss can be significant
  - Blood may be hidden inside uterus or vagina and woman can quickly become shocked
- Baby can become very sick very quickly
- Painless bleeding can be very serious
- Severe pain that does not ease between contractions is serious
- Bleeding and contractions can lead to high-risk birth
- Doing vaginal exam may make bleeding worse

Do not

- **Do not** do vaginal exam unless skilled and asked to by doctor
- **Do not** let woman eat or drink anything — may need operation — consider IV fluids

Do first — if emergency

- Call for help — have helper call for **urgent medical consult**
- Lie woman on left side
- Give **oxygen** to
  - Target O_2 sats 94–98%
  - *OR* if moderate/severe COPD target O_2 sats 88–92%
- IV cannula, largest possible
  - If you can't get IV cannula in — put in intraosseous needle
  - Give **normal saline** — 1L straight away *THEN* 125mL/hr or as directed by doctor
  - **Medical consult** — for pain relief, IV fluids
- Indwelling urinary catheter (page 327) when time
  - Do hourly measures — aim for 0.5mL/kg/hr

If birth about to happen — see Birthing baby (page 57) and call for help.
Get ready for baby who may need resuscitation (page 2)

Look — in file notes

- How many weeks pregnant, due date for birth
- Obstetric ultrasound report if done — where is placenta located (eg low-lying)
- Problems in this pregnancy — bleeding, diabetes, high BP, twins/multiple pregnancy
- Obstetric history — pregnancies and births, miscarriages, ectopic pregnancy, termination of pregnancy
- Gynaecology history — operations, cervical screening history
- Medical history — especially RHD, PID, STIs
- Results — blood group, RhD positive or negative, last Hb, GBS (page 152)

Ask

- When bleeding started, what she was doing, any bleeding before in this pregnancy
  - How much — spotting or lots of blood
  - Colour — bright (fresh) or dark (old)
  - Any clots or tissue
- Pain — when it started, where it is
- Injury — sexual assault, car accident, has she fallen or been hit
- Any other symptoms — fainting, fever, chills, nausea, vomiting
- Is baby moving

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- Hb
- U/A
- Head-to-toe exam — with attention to
  - Pad for amount of blood loss — change pad and record loss
  - Abdomen (STM, page 332) — feel for tenderness, rebound, guarding
- Uterus — feel for
  - Fundal height — if fundus above umbilicus
  - Tenderness, pain, hard or soft — if uterus hard — do not palpate further and do not feel for baby's position. If uterus soft — feel for position of baby
- Contractions

Do

- Collect urine for MC&S, blood for Kleihauer test for amount of foetal blood in maternal circulation
- If no antenatal care — also collect blood for syphilis, rubella and hepatitis B
- **Medical consult** about
  - Findings
  - Sending to hospital
  - Pain relief
  - Antibiotics — consider preterm labour, fever, GBS status positive or unknown. If miscarriage — woman with RHD may need preventive antibiotics (STM, page 342)
- If woman RhD negative and no Anti-D antibodies — give **RhD-Ig IM**
  - 12 weeks or less pregnant and 1 baby — 250 international units
  - 12 weeks or less pregnant and more than 1 baby (twins) — 625 international units
  - More than 12 weeks pregnant — 625 international units
- Continue management as directed by doctor and/or obstetrician

Causes of bleeding

In first 20 weeks of pregnancy

Ectopic pregnancy

Pregnancy that occurs outside uterus, usually in fallopian tube. Ectopic pregnancy can be life threatening. Tube can rupture and cause massive bleeding inside abdomen

Risk factors

- History of PID
- Tubal surgery (eg for previous ectopic pregnancy)
- Intrauterine contraceptive device
- Progesterone contraception
- Assisted reproductive technology (eg IVF)

Signs and symptoms

- Usually vaginal bleeding but not always
- May have missed 1–2 periods without other symptoms of pregnancy
- Pain usually one-sided but may spread across abdomen. May have shoulder tip pain
- Diagnosis is difficult without ultrasound

Miscarriage

Threatened or actual loss (complete or incomplete) of pregnancy

Risk factors

- Foetal anomalies — risk increases with increasing maternal age
- Uterine factors — fibroids, uterine malformations, incompetent cervix
- Substance use — cigarette smoking, amphetamines, cocaine
- Maternal diseases — poorly controlled diabetes, thyroid diseases, systemic lupus erythematosus (SLE)

Signs and symptoms

- Vaginal bleeding — spotting to massive bleeding
- Abdominal cramping or backache

Other causes

- Cervical problems — polyps, ectropion cervix, cancer, infection
- STIs
- Direct injury
- Trophoblastic disease (rare pregnancy related tumours)

After 20 weeks pregnant (antepartum haemorrhage)

Placenta praevia

All or part of placenta covers internal os (opening to cervix) — Figure 1.17. Often found on routine ultrasound

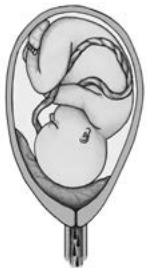


Figure 1.17

- Blood comes from behind placenta (mother's blood)
  - Can cause significant painless bleeding
  - Uterus usually soft, not tender
  - Increased risk of bleeding as cervix dilates
- Baby's head may not enter pelvis and baby's position may be abnormal — transverse (across uterus), breech
- Woman may have multiple episodes of bleeding
- Placenta can block birth canal so vaginal birth is not possible or too dangerous
- Baby almost always needs to be born by caesarean section and may need to be born early
- Mother may need blood transfusions

Placental abruption

Part or all of placenta comes away from wall of uterus — Figure 1.18

- Can occur spontaneously or after minor or major abdominal injury (eg fall, assault, motor vehicle accident)
- Can occur after taking drugs (eg amphetamines)
- Usually causes constant pain in abdomen or back — can be mild or very severe
  - Woman can present in labour
  - Uterus may be hard and tender
- Bleeding may be hidden inside uterus — Figure 1.19. Blood loss may be much greater than appears from vaginal bleeding
  - High risk that baby will die without medical attention
  - Consider in any pregnant woman with abdominal pain, with or without bleeding

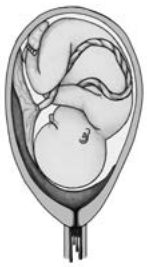


Figure 1.18

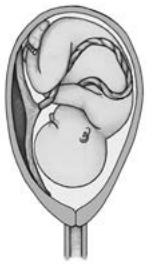


Figure 1.19

Other causes

- Bleeding from other parts of genital tract — bleeding from cervix after sex, local trauma, polyps, heavy blood and mucus 'show' prior to labour, infection
- Less common causes
  - Conditions such as cancer
  - Vasa praevia — bleeding from cord vessels (foetal blood)
- Very small bleed can lead to foetal compromise and/or death

Injuries in pregnancy

- All injured women of childbearing age are considered pregnant until proven otherwise
- Be aware that pregnancy may trigger or increase domestic/family violence — if suspected make sure woman is safe and refer her to support services (page 22)
- Best thing for baby is to take good care of mother — always assess and resuscitate woman first then assess baby
- Be aware of mandatory reporting requirements in your state/territory

Abdominal injury in pregnancy

- Any abdominal injury in pregnancy can be serious
- Usual signs of abdominal injury are not reliable — soft, non-tender abdomen does not rule out serious injury
- Placental abruption (page 37) can happen even after a minor abdominal injury
- In late pregnancy baby can be directly injured — foetal distress may not be obvious until hours after injury

Red Flags — Urgent Medical Consult

- Any serious injury
- Abdominal pain or injury
- Abdominal injury and mother RhD negative
- Pelvic injury
- Vaginal fluid loss including bleeding
- Signs of shock
- Woman more than 24 weeks pregnant — baby needs cardiotocogram (CTG) even if injuries are minor

Do not

- Do not do vaginal exam unless skilled and asked to by doctor

Do first

See Assessing trauma — primary and secondary survey — initial priorities same as for any injured person

Important extra points about Airway, Breathing, Circulation in pregnancy

A — Airway

- Increased risk that women will vomit and aspirate (get vomit in lungs)
- If airway or intubation needed — always put in nasogastric or orogastric tube as well

B — Breathing

- Give oxygen to target O_2 sats 94–98%

C — Circulation

- **Position woman on left side** with uterus pushed over to left — after 20 weeks pregnant the uterus presses on major blood vessels if woman lies flat on back — may cause low BP, foetal distress
- Control obvious external bleeding for transport and assessment
- If spinal injury suspected — immobilise then tilt spinal board 15–30° to the left by putting wedge or rolled-up blanket under it
- If positioning on left side or lateral tilt not possible
  - Place rolled up towel under right hip to tilt uterus to the left side
  - Use manual displacement of uterus — stand on woman's left, put both hands around pregnant abdomen and pull abdomen toward yourself

Any change indicating shock is very serious.

- Detecting shock is difficult — pregnant woman can lose up to 1,200–1,500mL of blood before any changes in pulse or BP
- **Signs of shock**
  - Increased RR
  - Pulse weak and fast (more than 100bpm) or difficult to feel
  - Central capillary refill longer than 2 seconds
  - Pale, cool, moist skin
  - Restless, confused, drowsy, occasionally unconscious
  - Low BP for age or relative to person's previously recorded values
- Put in IV cannula — largest possible, insert 2 if time
  - If you can't get IV cannula in — put in intraosseous needle
- If shock suspected — give 1L normal saline or Hartmann's solution as fast as possible, even if BP normal
- Further IV fluids — **medical consult**

At end of trauma assessment — must do medical consult even if injury seems minor

Ask

- Exactly how injury occurred
  - A complete history will help you work out likelihood of serious injury
  - In motor accidents ask specifically about type and position of seat belt
- Pain, contractions, baby movements
- How many weeks pregnant, due date for birth, obstetric ultrasound report
- Vaginal fluid loss, bleeding
- Is woman RhD negative

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- U/A
- Head-to-toe exam – with attention to
  - Abdomen – shape, bruising, surgical scars. Feel for tenderness, rigidity, guarding
  - Uterus and baby – feel if soft or hard, for tenderness or contractions, assess position of baby
  - Vulva and perineum – look for blood or fluid coming from vagina or urethra – note colour, amount, smell
  - POC Test – Hb

Do

- **Medical consult**
- If results not known take blood for FBC, blood group, antibodies and Kleihauer test for amount of foetal blood in maternal circulation
- If abdominal injury and mother RhD negative with no Anti-D antibodies — woman will need **RhD-Ig IM**
  - Under 12 weeks pregnant and miscarriage or painful vaginal bleeding — 250IU
  - Over 12 weeks pregnant — 625IU
  - Over 20 weeks pregnant — start with 625IU. Kleihauer test results will determine if more needed

Preeclampsia

Eclampsia (fitting) is serious consequence of severe preeclampsia

- **If woman fitting at presentation** — see Fits in the second half of pregnancy (page 47)

Red Flags — Urgent Medical Consult

- Systolic BP 170mmHg or more
- Diastolic BP 110mmHg or more

Table 1.10 Signs and symptoms of pre-eclampsia

Body organ or system	Signs	Symptoms
Cardiovascular	• High BP • Bleeding from venipuncture • Platelet count less than 100,000/microL	
Lungs	• Pulmonary oedema	• Breathlessness
Kidneys	• More than 2+ protein on U/A • Creatinine more than 90micromole/L	• Low urine output (less than 0.5mL/kg/hr)
Liver	• Tender abdomen — right upper quadrant	• Severe epigastric or right upper abdomen pain • Nausea and vomiting
Neurological	• Fits • Muscle spasms, hyperreflexia • Stroke	• New headache that doesn't go away • Visual changes (eg shooting stars, spots)

Do first

- Call for help
- Lie woman on her left side
- Give **oxygen** to
  - Target O_2 sats 94–98%
  - *OR* if moderate/severe COPD — 88–92%
- Put in IV cannula, largest possible
- Put second IV cannula in other arm when you have time
- Put in indwelling urinary catheter as soon as possible

Medical consult — doctor **must talk with obstetrician** about treatment
Treatment includes

- Sending to hospital
- Giving medicines to lower BP (eg nifedipine, hydralazine)
- Giving magnesium sulfate to prevent fits
- If less than 35 weeks pregnant giving medicines to help mature baby's lungs — **Betamethasone**IM — 11.4mg — 2 doses 24 hours apart

OR **dexamethasone** IM — 6mg — 4 doses 12 hours apart

Do not

- Do **not let** woman eat or drink anything — may need operation

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- U/A for protein, send urine for MC&S

Do — if directed by doctor

Treatment to lower BP

- Keep very careful fluid balance charts throughout
- Give **normal saline** IV 250mL at start of treatment to prevent hypotension (low blood pressure)
- **If asked to give nifedipine**
  - Give **nifedipine (IR)** oral — 20mg
  - **Do not** use slow-release (SR, CR, OROS) tablets — if immediate release (IR) tablets are not available consult obstetrician or pharmacist for access and guidance
  - **Medical consult** 45 minutes after giving
  - If BP still high — usually give second dose **nifedipine (IR)** oral — 20mg
  - If BP still high 45 minutes after second dose — **medical consult**
- **If asked to give hydralazine**
  - Give **hydralazine** IV bolus — 5–10mg — see Giving hydralazine (page 45)
  - **Medical consult** 20 minutes after giving
  - If BP still high — usually give second bolus dose **hydralazine** IV
  - Doctor may ask for maintenance hydralazine infusion
- **If diastolic BP falls below 90mmHg** — **medical consult**

Table 1.11 Antihypertensive drugs for severe hypertension in pregnancy

Drug	Dose	Side effect	Comment
Nifedipine IR	Oral — 20mg	Headache, flushing	Onset: 30–45 minutes Repeat: after 45 minutes
Hydralazine (bolus)	IV — 10mg over 3–10mins (first dose 5mg if foetal distress)	Flushing, headache, nausea, hypotension, tachycardia	Onset: 20 minutes Repeat: every 20–40 minutes
Hydralazine (infusion)	Initially: 10–20mg/hr Maintenance: 5–10mg/hr		Intermittent bolus preferred over infusion Titrate to blood pressure

Treatment to prevent fits

- Give loading dose of **magnesium sulfate** *THEN* give maintenance treatment — see giving medicines for preeclampsia
- High dose **nifedipine** and high dose **magnesium sulfate** given together can interact and cause serious low BP and/or breathing problems — use with care
  - If using **nifedipine** — give **magnesium sulfate** as an infusion **without** loading dose. Can give bolus dose later if woman has fit

While waiting for evacuation

- Check pulse, RR, BP, O_2 sats according to schedule for medicine given
  - If magnesium sulfate infusion running — also check patella reflexes
- Check every hour — temp, urine output — aim for 0.5mL/kg/hr, coma scale score (STM, page 100)
- When fitting and BP controlled — do first check in labour (page 177) even if no contractions

Giving medicines for preeclampsia

- **Take care not to overload with IV fluids**
- **Monitor fluid balance very carefully**
  - If giving hydralazine and magnesium sulfate infusions — already getting 45–125mL of fluid/hour
  - **Do not** give extra fluid unless directed by doctor

Giving magnesium sulfate

- Loading dose must be given IV
- Maintenance treatment can be IV or IM
- If overdose — treat with **calcium gluconate 10%** — have 10mL dose ready before starting magnesium sulfate treatment

Check

- Pulse, RR, BP, O_2 sats, urine output, patella reflexes — loss of patella reflex can be first sign of magnesium overdose
- Before starting magnesium sulfate woman must have
  - Patella reflex
  - RR more than 16 breaths/min
  - Urine output more than 0.5mL/kg/hr
- During treatment
  - RR, BP, patella reflex every 15 minutes for at least 2 hours
  - If stable after 2 hours — repeat every hour
  - O_2 sats, urine output every hour
- Tell woman she may feel a bit sick, hot, sweaty or have blurred vision

Do

- Give **magnesium sulfate** IV through its own dedicated line — do not use same line as hydralazine
- Flush line with 10mL normal saline first to make sure it is working

Loading dose

- Give **magnesium sulfate** IV — loading dose (page 43) 4g, over 10 minutes
  - Draw up 4g (8mL) of magnesium sulfate 50% — in 20mL syringe
  - Add 12mL sterile water or saline to the same syringe to make a 20% solution (4gm in 20mL)
  - Give this 4g magnesium sulfate 20% solution IV over 10 minutes using a burette attached to infusion pump
  - If no infusion pump — give as push over 10 minutes

IV maintenance

- Give **magnesium sulfate** IV infusion — 4g (8mL) at 1g/hr
  - Add 4g (8mL) to 100mL **normal saline**
  - Run solution at 25mL/hr through infusion pump
  - Label ‘magnesium sulfate 4g in normal saline 100mL’

IM maintenance

- Use only if IV maintenance can’t be given safely (eg no infusion pump) — **medical consult**
- Straight after IV loading dose — give **magnesium sulfate** deep IM — 10g (20mL) in 2 doses — 1 dose (5g/10mL) in each buttock. Use 21G needle
- *THEN* give **magnesium sulfate** IM — 5g (10mL) every 4 hours — until woman evacuated

Stop maintenance treatment and do medical consult if

- Patella reflex absent
- RR less than 16 breaths/min
- Urine output less than 0.5mL/kg/hr

If RR less than 12 breaths/min or woman stops breathing

- Stop infusion
- Start resuscitation — see Life support — DRS ABC (STM, page 27)
- Give **calcium gluconate 10%** IV — 10mL (1 ampoule) over 2–5 minutes

If woman has fit during maintenance treatment

- Give **magnesium sulfate** IV — 4g (8mL) directly from syringe over 5 minutes
- **Urgent Medical consult**

Giving hydralazine

Check

- Check pulse, RR, BP, O_2 sats
- During treatment — check pulse, RR, BP, O_2 sats
  - Every 5 minutes for 15 minutes
  - *THEN* every 15 minutes for 1 hour
  - *THEN* every 30 minutes until BP remains stable
- Tell woman she may feel a bit sick or hot from this medicine

Do

Give IV hydralazine through its own dedicated line — it is incompatible with many drugs including magnesium sulfate and glucose

IV bolus

- **Medical consult for dose**
- To reconstitute — mix 20mg ampoule hydralazine with 2mL normal saline to dissolve *THEN* add 18mL normal saline to give 20mL hydralazine at 1mg/mL
- Inject hydralazine dose slowly over 3–5 minutes

IV maintenance infusion

- Give **hydralazine** IV infusion — 50mg at 6mg/hr
  - Add 50mg (2½ ampoules) to 500mL normal saline

- **Medical consult** if
  - Diastolic BP less than 90mmHg or stays at more than 100mmHg
  - Systolic BP less than 145mmHg
  - Pulse more than 120 beats/min
- Change rate of infusion as advised by doctor
  - BP usually controlled with hydralazine maintenance dose of 3–9mg/hr (30–90mL/hr solution)

Supporting resources

- How to access nifedipine IR
- $MgSO_4$ Dosing and Monitoring Checklist

Fits in the second half of pregnancy

For fits in the first half of pregnancy — see Fits — seizures (STM, page 76)

Cause of fits — 20 or more weeks pregnant (gestation)

- Eclampsia — fit occurring in a woman with preeclampsia (page 41) or pregnancy-associated high BP (page 158)
  - Can occur up to 3 weeks postpartum
- Epilepsy, alcohol withdrawal, petrol sniffing, head injury, meningitis, encephalitis, stroke, low blood glucose, electrolyte abnormalities

Do first

- Call for help — have helper call for **urgent medical consult** straight away
- Give **oxygen** to
  - Target O_2 sats 94–98%
  - *OR* if moderate/severe COPD 88-92%
- Put in recovery position on left side — Figure 1.20
- Put in 2 IV cannulas — take blood for BGL, electrolytes
- Manage as eclampsia — even if woman epileptic
- Give **magnesium sulfate** IV — loading dose (page 43) 4g, over 10 minutes
  - Draw up 4g (8mL) of magnesium sulfate 50% — in 20mL syringe
  - Add 12mL sterile water or saline to the same syringe to make a 20% solution (4gm in 20mL)
  - Give this 4g magnesium sulfate 20% solution IV over 10 minutes using a burette attached to infusion pump
  - If no infusion pump — give as push over 10 minutes
- Start **magnesium sulfate** IV infusion (page 44)
  - IV infusion — 4g (8mL) at 1g/hr for 24 hour *THEN* review for cessation/ continuation
  - Add 4g (8mL) to 100mL **normal saline**
  - Run solution at 25mL/hr through infusion pump
  - Label 'Magnesium sulfate 4g in normal saline 100mL'

Figure 1.20

- *OR* if no infusion pump or no IV access — give magnesium sulfate (page 43) IM
  - Straight after IV loading dose — give **magnesium sulfate** deep IM — 10g (20mL) in 2 doses — 1 dose (5g/10mL) in each buttock. Use 21G needle
  - *THEN* give **magnesium sulfate** IM — 5g (10mL) every 4 hours — until woman evacuated
- If fit continues for more than 3–5 minutes *OR* fits again during maintenance treatment
  - Repeat **magnesium sulfate** IV loading dose
  - Get ready to give **midazolam** — see Fits (STM, page 76) — **medical consult**
  - Magnesium sulfate and midazolam together can put breathing at risk. Be ready to manage airway and breathing
- Monitor BP, patella reflexes, RR for respiratory depression, urine output (aim for 0.5mL/kg/hr) and note if further seizures occur
  - If BP stays more than 160/110 — see Preeclampsia (page 41)
- **Stop maintenance treatment and do medical consult if**
  - Patella reflex absent
  - RR less than 16 breaths/min
  - Urine output less than 0.5mL/kg/hr
- **If RR less than 12 breaths/min or woman stops breathing**
  - Stop infusion
  - Start resuscitation — see Life support — DRS ABC (STM, page 27)
  - Give **calcium gluconate 10%** IV — 10mL (1 ampoule) over 2–5 minutes — see medicines for preeclampsia (page 43)

Do not

- **Do not** leave woman unattended
- **Do not** leave woman on her back
- **Do not** let woman eat or drink anything

Check

- Airway and breathing — after fit has stopped
- History in file notes
  - How many weeks gestation (pregnant)
  - BP reading in early pregnancy
  - Medical problems — epilepsy, alcohol or petrol use, high BP, kidney disease

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- Coma scale score, pupil reactions
- Head-to-toe exam — with attention to
  - Observations every 15 minutes for at least 1 hour after seizure — examine carefully for sickness or injury that may have caused fit. Consider meningitis (STM, page 126), head injury (STM, page 98), stroke
  - Vaginal loss, signs of labour

Do

- **Medical consult** — doctor should consult obstetrician early
  - Talk with doctor about sending to hospital, BP control, steroids for foetal lung maturation
- If airway blocked or noisy breathing — put in nasopharyngeal or oropharyngeal airway. If they spit out or gag — leave out. Consider gentle suctioning of mouth
- Use tilt/wedge to position on left side
- If BGL less than 4mmol/L — see Low blood glucose (STM, page 118)
- Put in indwelling urinary catheter
  - Measure urine output hourly — aim for 0.5mL/kg/hr

Premature rupture of membranes

Rupture of membranes (sudden or continuous fluid loss from the vagina) before the start of regular contractions. Can happen

- At term (37 or more weeks pregnant) — PROM
- Preterm (20–36 weeks pregnant) — PPROM

Red Flags — Urgent Medical Consult

- Signs of sepsis
- Tender uterus
- Smelly vaginal discharge or pus
- Cord prolapse — cord comes out before the baby
- Placental abruption — pain and bleeding when the placenta separates from the uterus before the baby is born
- PPROM at less than 37 weeks
- PROM (37 weeks or more) *AND*
  - More than 18 hours or unknown time since membranes ruptured
  - *OR h*istory of or known Group B Streptococcus (GBS) positive

Do not

- **Do not** perform a digital vaginal exam at any stage — increases risk of infection

Do first

- Examine genital area
  - If cord at vulva or in vagina — see Cord prolapse (page 65) straight away
  - If feet or bottom at vulva or in vagina — see Breech birth (page 60) straight away
  - **Medical consult**

Ask

- Vaginal loss
  - When and how it started
  - How much — colour, smell, any blood
  - If happened before in this pregnancy
- Any abdominal or low back pain or contractions
- Baby movements

Check

- Obstetric ultrasound report for location of placenta — clear of cervical os (opening of neck of womb)
- Swab results — GBS, STIs, UTI, other infection
- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- U/A
- Head-to-toe exam — attention to
  - Vulva — look for sores (page 268) especially herpes
  - Vaginal loss — colour, amount, smell, blood
  - If bleeding from vagina — see Bleeding in pregnancy (page 33)
  - Abdominal assessment (STM, page 332) — tenderness, rebound, guarding
  - Uterus — tender, soft or hard
  - Contractions — see Labour and birth (page 176)
  - Position of baby, if skilled — head first, breech (bottom or feet first)

Do

- Sterile speculum exam of vagina and cervix to look for amniotic fluid, if skilled
  - Use sterile gloves and sterile speculum
  - Look for pooling of fluid in vagina
  - Ask woman to cough — look for fluid coming out of cervix
  - Do test (eg AmniSure) for amniotic fluid to confirm PROM, if available
- Also look for
  - Ulcers inside vagina — may be herpes
  - Cervical dilatation (open cervix)
  - Membranes, cord, hair or other part of baby in cervix. If cord seen — see Cord prolapse (page 65) straight away
  - Discharge
- High vaginal swabs for MC&S and endocervical swabs for MC&S and gonorrhoea, chlamydia, trichomonas NAAT
- If not able to do speculum exam — take low vaginal swabs for MC&S and gonorrhoea, chlamydia, trichomonas NAAT, urine for MC&S
- Put pad between woman's legs. Change pad at each check
  - If bleeding — save and weigh all pads (1g increase = 1mL loss)
- Lie woman on left side
- Explain what is happening and why
- Put in IV cannula — largest possible, insert 2 if time
- **Medical consult** — doctor should talk with obstetrician about antibiotics, steroids and sending to hospital

Antibiotics

- If PPROM (less than 37 weeks)
  - Give **amoxicillin** *OR* **ampicillin** IV — 2g, every 6 hours for 48 hours

THEN **amoxicillin** oral — 250mg, 3 times a day (tds) for further 5 days or until delivery (whichever is sooner)

AND **erythromycin** oral — 250mg, 4 times a day (qid) for further 5 days or until delivery (whichever is sooner)

- If allergy to penicillin — **medical consult** for **clindamycin** IV — 900mg, every 8 hours until birth
- PROM (37 weeks or more) and more than 18 hours or unknown time since membranes ruptured — will need treatment for GBS (page 152)
  - See Chorioamnionitis (intrauterine infection)
  - If at risk of endocarditis (STM, page 347) — give preventive antibiotics

Steroids to mature baby's lungs — if less than 35 weeks pregnant

- **Betamethasone** IM — 11.4mg — 2 doses 24 hours apart
- *OR* **dexamethasone** IM — 6mg — 4 doses 12 hours apart

Sending to hospital

- All women with PROM or PPROM should be sent to hospital
- If woman goes home before going to hospital — advise do not use tampons, have sex, have bath or go swimming

Chorioamnionitis (intrauterine infection)

Red Flags — Urgent Medical Consult

- Temp more than 38°C ***AND*** any 2 other signs
  - Rapid (fast) breathing (RR more than 18 breath/min)
  - Rapid (fast) pulse (more than 100 beats/min)
  - Tender uterus
  - Smelly vaginal discharge or pus

Do

- **Medical consult**
- Take blood cultures before giving antibiotics
- Give **amoxicillin** *OR* **ampicillin** IV — adult 2g, every 6 hours (qid)

AND **gentamicin** IV — 5mg/kg — doses (page 364) — once a day

AND **metronidazole** IV — adult 500mg, every 12 hours (bd)

- If allergy to penicillin — **medical consult**

Preterm labour

Labour (regular contractions) before 37 weeks pregnant

- Be aware
  - Birth may be difficult or happen very fast
  - Membranes and amniotic fluid may be infected (intrauterine infection) (page 52)
  - Baby may be breech or other abnormal presentation
  - Baby may have breathing problems and/or low BGL when born

Do first — if birth about to happen

- **Urgent medical consult** — don't leave the woman alone
  - Get **midwife/doctor/obstetrician** on speaker phone if none at the clinic
  - Arrange to send to hospital if there is time
- See — Getting ready to birth baby (page 179) and Newborn resuscitation (page 7)
- If baby's bottom or foot coming first — see Breech birth (page 60)

Check notes for

- Cerclage (cervical stitch)
- Expected date of birth (current gestation)
- Obstetric and medical history including medications
- Date of most recent previous pregnancy

Ask

- Vaginal discharge or bleeding — currently or during pregnancy
- Any fluid loss — using pad or pants wet, how long, colour, quantity
- Baby movements
- Describe abdominal pain
- Any urine problems — burning, passing urine often

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- Before sending to toilet check
  - Pad or pants for vaginal fluid loss — quantity, color, blood
  - Vulva for cord prolapse. If cord seen — see Cord prolapse (page 65)
- U/A, send urine for MC&S +/- PCR — see Urine problems in pregnancy (page 168)
- Check pads after 10–15 minutes for any fluid leakage

Do

Sterile speculum exam (if skilled) after woman has been lying down for 10 minutes (not flat on back) — use sterile gloves and sterile speculum

- Wash vulva with sterile **normal saline**. **Do not** use lubricant
- Gently put in sterile speculum and look for
  - Pooling of fluid at back of vagina
  - Ulcers on inside or outside of vagina — may be herpes
  - Cervical dilatation
  - Membranes, cord, hair or other part of baby in cervix. If cord seen — see cord prolapse (page 65) straight away
  - Discharge from cervix
- Ask woman to cough or perform Valsalva manoeuvre — look for fluid coming out of cervix
  - If fluid present — do test (eg AmniSure) for amniotic fluid to confirm ruptured membranes, if available
  - Take high vaginal swabs for MC&S, and endocervical swabs for MC&S and gonorrhoea, chlamydia, trichomonas NAAT
- If not able to do speculum exam — take low vaginal swabs for MC&S and gonorrhoea, chlamydia, trichomonas NAAT

If woman bleeding — see Bleeding in pregnancy (page 33)

- **Do not** do vaginal exam
- **Medical consult** —Doctor should **talk with obstetrician** about
  - Sending to hospital
  - Stopping labour
  - Antibiotics — may need treatment for GBS (page 152) or intra-uterine infection
  - Pain relief (STM, page 326)
  - **Magnesium sulphate** if gestational age 24–33 weeks and birth imminent within 24 hours — obstetrician to advise on dosing regime
  - If less than 35 weeks pregnant — help mature baby's lungs by giving **betamethasone** IM — 11.4mg — 2 doses 24 hours apart *OR* **dexamethasone** IM — 6mg — 4 doses 12 hours apart
- See — Labour and birth (page 176)
- If contractions stop and does not progress to birth *AND* the woman remains in community — make sure clear management plan is provided by obstetrician for the rest of the pregnancy

Preterm labour with cerclage (cervical stitch)

If woman with suture or tape around cervix has PROM or preterm labour in community

- **Urgent medical/obstetrician** consult about sending to hospital and immediate management
- **Do not** remove suture or tape unless advised to by doctor
  - Only need to remove if woman is in established labour and will give birth before she can be sent to hospital
  - If doctor not in community — they need to stay on phone and talk you through the procedure

Stopping labour (tocolysis)

- Tocolysis is the use of medicines to stop labour — may not work if labour is advanced
- Check medical history especially for RHD, thyroid problems, diabetes, kidney disease, high BP, asthma

Do not

- **Do not** use controlled-release nifedipine tablet (SR, CR, OROS)

Do first

- **Always do medical consult** before starting treatment
  - Decide whether to stop labour and which medicine to use
  - Doctor arranging evacuation needs to talk with obstetrician at receiving hospital

Nifedipine — Immediate Release tablets

- Nifedipine comes in a number of different formulations
- Generally nifedipine is very well tolerated. Side effects can include headache, fast pulse, flushing
- **Medical consult** before using nifedipine for woman with significant heart disease — RHD is common in Aboriginal communities
- **Do not use controlled-release tablets** (CR, OROS) — only Immediate Release (IR) tablets can be used for stopping labour
- Immediate Release tablets may only be available through the Special Access Scheme. If nifedipine IR tablets are not available — contact obstetrician *OR* pharmacist for access and guidance

Check

- Before giving nifedipine IR — monitor contractions — how often they are felt, how long they last, how strong
- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- Repeat REWS and contractions observations every 15 minutes — see Labour and birth (page 177)

Do

- POC Test — Hb
- Put in IV cannula — largest possible, insert 2 if time
  - Give **normal saline** 1L — 500mL as quickly as possible *THEN* 125mL/hour
- Give **nifedipine IR** oral — 20mg/dose every 30 minutes for up to 3 doses. Total 60mg
  - Crush or chew first 2 doses to make it work faster
  - If woman vomits in first hour — **medical consult**
  - If contractions persist 30 minutes after first dose — give second dose *AND* if contractions persist after 60 minutes — give third dose
- If contractions still persist — give further **nifedipine IR** — 20mg/dose every 3–6 hours up to 48 hours. Maximum dose — 160mg in 24 hours
  - If systolic BP less than 90mmHg or short of breath — **medical consult** — may need to stop nifedipine
- **If contractions do not stop** — doctor may suggest different treatment
- If high dose of **nifedipine** given and prophylaxis needed to prevent fitting — only give magnesium sulfate as maintenance infusion. Do not give usual loading dose
- **High dose nifedipine and high dose magnesium sulfate together can interact and cause serious low BP and/or breathing difficulties**

Supporting resources

- How to access nifedipine IR

Quick guide to helping with a birth

If in strong labour with very painful contractions close together — woman may be about to have her baby

Get ready for birth quickly if

- Woman distressed, restless, irritable, feels like 'pushing' or going to toilet to pass faeces
- Woman says baby is coming

Do first

- Call for help — get **midwife/doctor/obstetrician** on speaker phone, if none locally
- If woman having contractions but doesn't have 'urge to push' — **medical consult** and see Labour and birth (page 176)
- Find support people — if possible female ATSIHP or older women familiar with birthing
- Reassure woman, explain what is happening and have someone stay with her for support

Ask helper to get equipment (page 2)

- Birth box and birth/obstetric medicine kit from clinic fridge. Should include
  - 2 sterile metal cord clamps, sterile blunt-ended scissors for cutting cord, 2 plastic cord clamps
  - Oxytocin box of 5 (from fridge) — 1 ampoule (10 international units/mL) — needed for delivery of placenta. Other 4 are needed if she bleeds after birth
  - Resuscitation equipment for mother (eg oxygen, mask, bag-valve-mask, suction equipment with adult yankauer sucker)
  - 2 large bore IV cannula
- For baby
  - Warm towels
  - Oxygen with flow meter (flow rates up to 10L/min)
  - Infant face mask, oxygen tubing
  - Bag-valve-mask — sizes 0 and 00
  - Mechanical suction (low pressure if possible), tubing
  - Suction catheters, sizes 8–12F

Check

- Look at vulva — can you see part of baby (usually the head)
  - If you can't see baby but there is bulging of perineum or anus — birth is likely to be close
  - If umbilical cord at vulva — see Cord prolapse (page 65) straight away
  - If baby's foot or bottom coming first — see Breech birth (page 60)
  - If you can't see baby and perineum not bulging — **medical consult** — see Labour and birth (page 176)

If time

- Ask helper to get woman's pregnancy record. Check
  - Gestation (how many weeks pregnant)
  - Medical complications (eg diabetes, anaemia)
  - Vaginal swab results for Group B streptococcus (page 152) (GBS)
- If membranes ruptured (waters broken) ask when — look at colour of liquor (waters)
  - Clear, pink or clear with blood mixed in is normal
  - Meconium (brown/green) means baby has passed faeces
- Put in IV cannula — largest possible, insert 2 if time
- Ask helper to do **medical consult**

Do — if head seen or perineum bulging

- Put on goggles and sterile gloves
- Support woman to get into a position that feels comfortable — upright position or kneeling on all fours or semi-sitting propped up on pillows. **Do not** let her lie flat on her back
- Let birth of head happen slowly on its own
  - Let woman push as she feels like it
  - When perineum is stretched thin and labia is wide apart as head is being born — ask woman to 'pant' or puff through contractions — helps baby's head to be born as slowly as possible and may help to stop perineum from tearing
  - Wait for baby's head to turn and face inside of woman's leg — you don't need to help this

Birth of shoulders

- Baby usually born with next contraction
  - After shoulders come out the rest of baby's body will usually follow
  - Support baby as it births — it will be slippery so use gentle but firm grip. Can use warm towel
- If not born with next contraction
  - Put palms of your hands on each side of baby's head, over ears and temples
  - Gently ease baby's head toward woman's anus as she pushes anterior shoulder out from underneath pubic bone
  - Once anterior (front) shoulder born gently ease baby's head toward woman's abdomen as she pushes out posterior (back) shoulder
- **If shoulders do not come out — they could be stuck. This is an emergency — see Shoulder dystocia (stuck shoulder) straight away** (page 67)
- After the birth — Give **oxytocin** IM — 10 international units in woman's thigh

Immediate care of baby

- Put baby skin-to-skin on mother's chest or abdomen
  - If mother doesn't want baby on her — put baby between her legs, away from blood and mess
- Do not clamp cord immediately — leave for at least 1 minute and until stops pulsating if possible
- Dry baby very well, remove wet towel and cover baby with clean warm towel — make sure head is covered
- Do 'rapid assessment' of baby's condition
  - Breathing or crying
  - Heart rate more than 100 beats/min — listen with stethoscope
  - Good muscle tone
- **If baby pale, floppy and/or not breathing properly and/or heart rate less than 100 beats/min — see Newborn resuscitation straight away** (page 6)
- If baby breathing, good muscle tone and becoming pink — see Labour and birth Immediate care of baby (page 182)
- Important to also follow the rest of the steps for care of mother and baby — see Labour and birth Third stage of labour (page 183)
- See Care of mother — first 24 hours after birth (page 190)

Breech birth

- Baby's bottom or foot comes out first. Many breech babies are born with little help
- If baby preterm — increased risk of cord prolapse (page 65) or head getting stuck
- Baby more likely to pass meconium (faeces). May be just before birth, but if earlier in labour baby may be distressed
- Only do vaginal exam if skilled

Baby's oxygen supply may be decreased. Be ready to resuscitate baby (page 7)

2 methods to manage breech birth

- Normal (unassisted) breech birth — no need to touch baby, it comes by itself
- Assisted breech birth — need to help baby to be born

Equipment

- Birth and resuscitation equipment (page 2)
- Sterile Sims' speculum — Figure 1.21

Figure 1.21

Do first

- Call for help — have **midwife/doctor/obstetrician** on speaker phone, if none locally
- Find support people, if possible female ATSIHP or older women familiar with birthing
- Reassure woman and explain what is happening, have someone stay with her for support
- Get ready to send to hospital
- Do 'first check in labour' — see Labour and birth (page 177)

If in labour

- Unless birth is about to happen **try to stop labour** (page 55) — **medical consult**
- Make sure woman has emptied her bladder

If labour continues and birth likely

- Put in IV cannula — largest possible, insert 2 if time
- If waters break — check for cord prolapse (page 65). Cord may be seen at vulva or felt just inside vagina. More common in breech birth

- If baby's foot seen at vulva or felt — **wait**
  - Baby's foot may have slipped through cervix that still needs to dilate
  - Baby will not be born until its bottom is at vulva — may take some time
  - Dilation may take some time — you may be asked to try to stop labour
- Get everything ready as you would for a normal birth

Normal (unassisted) breech birth

Next steps outline birth that progresses normally

- Have **midwife/doctor/obstetrician** on speaker phone, if none locally
- If no progress with every contraction — see assisted breech birth

Do

Figure 1.22

- Make sure woman is in comfortable **upright** position (not lying down)
  - Standing with buttocks leaning against edge of bed so she can rest in between contractions and baby can hang as it slowly comes out — Figure 1.22
    OR other comfortable position — Figure 1.23 for examples
- Gravity will help with birth. Be ready as birth can happen quickly, especially if baby preterm
  - **Do not** touch the baby — keep your 'hands off the breech'
  - If progress seems slow — ask woman to change to another upright position

Figure 1.23

- Woman should push when she wants to — unless baby distressed. If distressed — see Assisted breech birth straight away
- **Make sure baby's back stays opposite to woman's back**
  - If you are in front of woman — you will see baby's back
  - If you are behind woman — you will see baby's abdomen — Figure 1.24

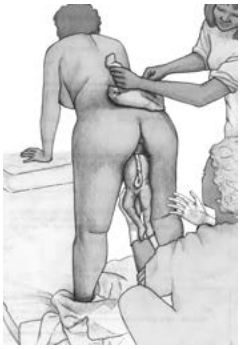


Figure 1.24

- If baby starts to turn so it is facing the same way as woman — see Assisted breech birth to help turn it back

- Watch for progress with each contraction — Figure 1.25
- 'Hands off' — Figure 1.26. But be ready to catch baby — Figure 1.27
- Rub baby dry vigorously with warm towel. Breech babies often need more stimulation — may need resuscitation (page 7)

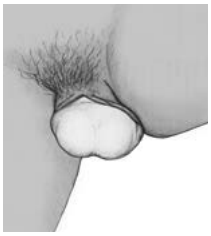


Figure 1.25

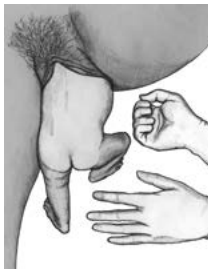


Figure 1.26

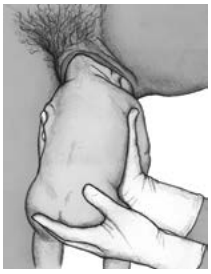


Figure 1.27

Figure 1.28

Assisted breech birth

Do not

- **Do not** pull on baby — can cause head or shoulders to get stuck
- **Do not** hold baby by its abdomen — hold hips (bony pelvis) by putting your thumbs on baby's buttocks and your fingers around its thighs

Do

- If no birth progress with each contraction — **change woman's position**
  - On bed with head of bed elevated to keep her as upright as possible
  - Bring buttocks to edge of bed in half sitting position with someone holding legs up toward her abdomen. Support legs wide apart
  - *OR* If you have no help — get woman to hold her legs behind the knees, pull them back toward her chest — Figure 1.28
- Ask woman to push with each contraction
- If baby is out to its umbilicus but legs are not fully out
  - Put 1 finger into vagina, find back of baby's knee — push gently to bend knee then help the leg out
  - Repeat for other leg
- Birth should keep progressing with each contraction
- Baby might start to turn on its side when shoulders are coming out — make sure baby doesn't turn too far

Remember when facing woman you should see baby's back

If arms not coming and not seeing progress

Need to **help birth by turning baby** to help arms and shoulders out

Do not hold baby by its abdomen *AND* **do not** pull baby — hold hips (bony pelvis) by putting your thumbs on baby's buttocks and your fingers around its thighs

- Turn baby on its side with a contraction. Lower baby to let baby's weight bring top arm out — Figure 1.29
- If baby's arm doesn't come — put finger into vagina along baby's back, over its shoulder and down chest, sweeping arm out
- Lift baby up to let other arm come out — Figure 1.30
- If you see shoulder but arm doesn't come — put finger into vagina along baby's back, over its shoulder and down chest, sweeping arm out
- Once shoulder blade is visible the shoulders should be born with next push. Usually happens without difficulty

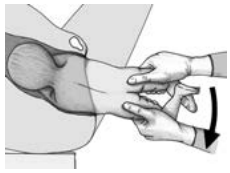


Figure 1.29

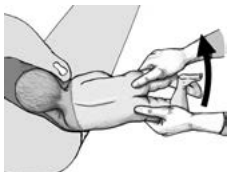


Figure 1.30

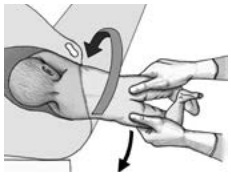


Figure 1.31

If arms still don't come

- Keep holding baby by its hips. Turn baby half circle (180°) to face opposite side, lower baby to let baby's weight bring top shoulder toward front and under pubic bone — Figure 1.31
- When turning baby
  - Keep baby's back opposite to woman's back at all times
  - Try to turn baby during a contraction
- If arm doesn't come out — put finger in vagina along baby's back, over its shoulder and down chest, sweeping arm out
- To get other arm out — turn baby back another half circle (180°) in opposite direction — Figure 1.32 . Put finger in vagina along baby's back, over its shoulder and down chest, sweeping arm out
- When arms are out, turn baby again so facing mother's back — Figure 1.33. Let baby hang — Figure 1.34

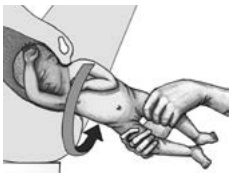


Figure 1.32

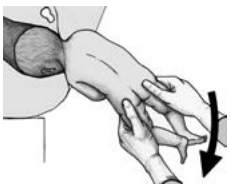


Figure 1.33

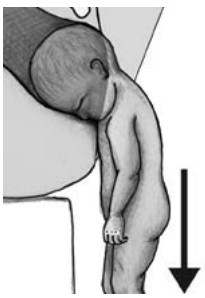


Figure 1.34

To deliver head

- Let baby hang and birth slowly until you can see nape (back) of baby's neck — Figure 1.34
- Ask woman to pant — not push. Let head come out **slowly**

If head doesn't come out easily

- Let baby rest on your forearm
- Put your index and middle fingers on baby's cheek bones or in baby's mouth — Figure 1.35
- Helper pushes down with suprapubic pressure (closed fist just above pubic bone) — Figure 1.35 — helps to keep baby's head flexed
- Put other hand across baby's shoulders and push middle finger against back of occiput (baby's skull) — Figure 1.35
- Push back of head forward and pull finger in mouth down and backward while helper pushes from above — do not twist baby
- Ask woman to pant and let head come out slowly
- Chin and mouth come out first, head will follow. As head is born through this flexing motion — lift (not pull) baby upward and let baby's head come out slowly — Figure 1.36

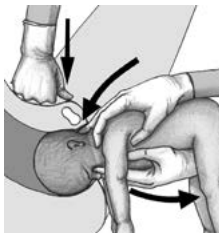


Figure 1.35

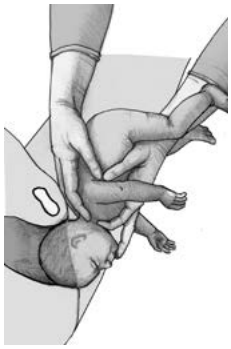


Figure 1.36

If head still won't come

Sometimes during delivery of preterm breech baby the head may become trapped by undilated cervix. **Don't panic — do not pull on baby and get help urgently**

- Lay mother down. Hold baby by legs and lift body up
- Pass Sims' speculum (or bottom of bivalve speculum) along back wall of vagina, past baby's mouth and nose — leave it there
- Suction out secretions in vagina, around baby's mouth and nose
- Baby now has clear passage of air if it starts to breathe
- Place oxygen tubing along Sims' speculum, give **oxygen** at 2L/min
- **Midwife/doctor/obstetrician consult** straight away
- Stay calm and talk woman through what you are doing

After baby born

- See Labour and Birth after the birth (page 182) and follow the rest of the steps for care of mother and baby

Follow-up

- Talk with mother and others at the birth and explain what you were doing
- Talk with doctor and midwife about follow-up for mother and baby
- All breech babies need to be seen by paediatrician to check hips and for congenital anomalies that may have caused breech position

Cord prolapse

- Cord coming out of vagina before baby — cord drops out of uterus before head or presenting part delivers
- Cord may be seen at vulva, at entrance to or outside the vagina — Figure 1.37
- Cord can be compressed between baby and pelvis during a contraction and/or spasm in colder outside temperature
  - Both stop blood supply from placenta and baby could die — aim of interventions is to take pressure off the cord

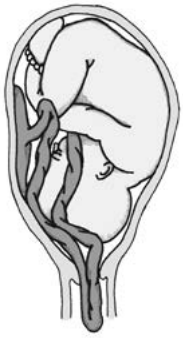


Figure 1.37

Consider cord prolapse if

- Woman has ruptured membranes and baby is preterm
- Woman feels something drop out of vagina

Do not

- **Do not** let woman eat or drink anything — may need operation — consider IV fluids

Check

- Need to do vaginal exam to diagnose cord prolapse unless cord is visible outside vagina — cord is a smooth pulsating band
  - Sterile gloves best but don't delay if not available quickly
  - Handle cord as little as possible
  - Calmly tell woman what's happening. You need her help and attention

Do — if birth about to happen

If woman has urge to push — need to birth baby quickly as baby not getting oxygen supply through cord

- Talk woman through what is going to happen in the next few minutes
- Ask and help woman to get into upright position — Figure 1.38 for examples
- Encourage woman to push as hard as she can and birth baby as soon as possible — see Labour and birth (page 176)
  - **Be aware** baby may be in breech position — see Breech birth (page 60)
  - Be ready to resuscitate baby (page 7)

Figure 1.38

Do — if birth not about to happen

- Call for help
- If cord outside vagina — use sterile gloved hand to gently put it back into vagina to keep warm
- **Ask woman to** get into knee-to-chest position — Figure 1.39 *OR* if not able to stay in this position or ready to be transported — lie on left side with pillows or blanket under hips and head tilted down — Figure 1.40

Figure 1.39

Figure 1.40

- **With sterile gloved hand put 2 fingers into vagina and push baby's head (or presenting part) up off the cord — continue until baby is born**
  - Get help — this is very tiring
- **Ask helper to do urgent medical consult** about
  - Sending woman to hospital straight away
  - Medicines to stop labour
- Be calm and reassure woman
- If likely to be a long time before delivery — put in indwelling urinary catheter (page 327) to help lift presenting part off cord
  - Use standard giving set to fill bladder with **normal saline** 500–700mL (as tolerated)
  - Clamp catheter
  - Every hour — release clamp, drain 30mL of urine and re-clamp catheter. Do more often if giving IV fluids
- If cord stops pulsating baby may have died — **medical consult**

Shoulder dystocia (stuck shoulder)

Baby's head born but shoulder stuck behind mother's pubic bone

- **Emergency situation** if shoulder stuck too long — risk that baby will develop hypoxia (not get enough oxygen) and have brain damage
  - **Baby will probably need resuscitation** (page 7)
  - Woman more likely to have postpartum haemorrhage (page 77)
- Only use gentle traction on baby's head or neck — force will not move shoulders and may injure baby
- Aim is to release stuck shoulder by moving shoulders so they fit through the birth canal

Check

- Signs of shoulder dystocia
  - Baby's neck and chin retract back into woman's body, face looks squashed ('turtle sign') — Figure 1.41
  - Babies body does not birth with next contraction

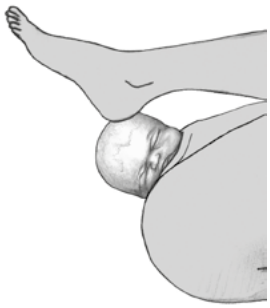


Figure 1.41

Do

- Explain to woman what is happening — she will be more able to help if she understands what is going on
- **Call for help**
  - Get **midwife/doctor/obstetrician** on speaker phone, if none locally
  - Have helper read each step out to you
- Consider episiotomy, if skilled
- Try each step for no longer than 30 seconds before going to next
- Start steps with or without contraction
- Try each step in order until one works. After first shoulder is released the other shoulder should follow and baby's body will be born

Step 1 (knees-to-nipples — McRoberts manoeuvre)

- Help woman onto back with bottom at edge of bed if possible. Lay flat on back with 1 pillow under head
- Have helper push on woman's feet to push bent knees toward chest
  - *OR* have woman hold legs at knees and pull knees toward chest (knees-to-nipples) — Figure 1.42

Figure 1.42

- Ask woman to push. At same time, using palms of your hands, apply **gentle** steady traction (pull) to baby's head in direction of baby's spine — Figure 1.42

If doesn't work (no progress) — Step 2 (suprapubic pressure)

- Woman in same position as Step 1 — on back, knees-to-nipples
- Keep applying gentle traction (pull) to baby
- At the same time have helper stand on same side of bed as baby's back, interlock hands as for CPR and put hands just above pubic bone — push baby's back down and forward — Figure 1.43
  - Helper is trying to push baby's shoulder toward its chest and out from under pubic bone
  - Apply continuous pressure for 30 seconds
  - If no progress — try same pressure in up and down rocking motion for another 30 seconds

Figure 1.43

If this doesn't work — Step 3 (roll onto all fours)

- Help woman onto all fours in knees-to-nipples position
- Using palms of your hands apply **gentle** axial traction (pull) on baby's head in direction of baby's spine — Figure 1.44

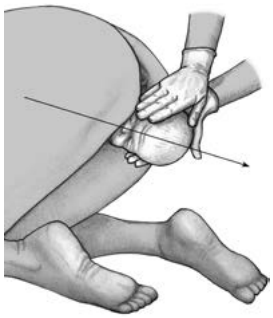


Figure 1.44

If this doesn't work — Step 4 (deliver posterior arm)

- Woman in same position as Step 3 — on all fours, knees-to-nipples
- **Try to release uppermost arm (internal procedure)**
  - Entering near anus, put fingers into vagina along baby's face
  - Find baby's uppermost hand — may be in front of face or chest. Grab hand between your fingers — Figure 1.45, sweep hand forward toward baby's nose and over face — Figure 1.46
  - If you can't find hand — try to bend elbow to bring hand forward
- Once arm outside vagina — using palms of your hands apply gentle traction (pull) on baby's head in direction of baby's spine. Top shoulder should come out

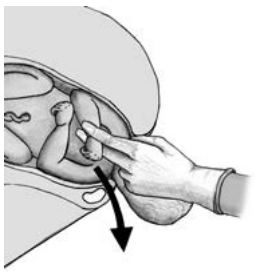


Figure 1.45

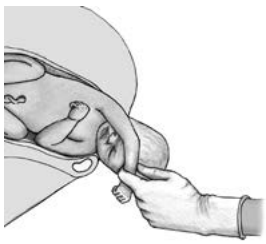


Figure 1.46

If this doesn't work — Step 5 (internal rotation of shoulders)

- Roll woman **onto her back and try to rotate (turn) baby's shoulders**
  - Put 2 fingers into vagina near anus — Figure 1.47. Slide fingers up baby's back and find scapula (shoulder blade) behind top shoulder
  - At same time put 2 fingers of your other hand in front of bottom shoulder — Figure 1.48
  - Push forward on top shoulder and backward on bottom shoulder at the same time — Figure 1.49
- If you feel shoulders turn — using palms of your hands apply **gentle** traction (pull) on baby's head again in direction of baby's spine (axial)

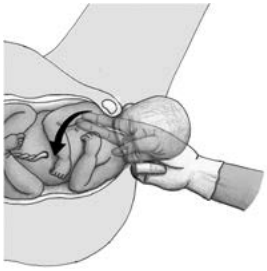


Figure 1.47

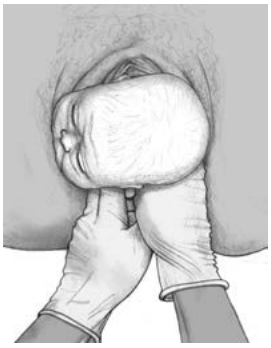


Figure 1.48

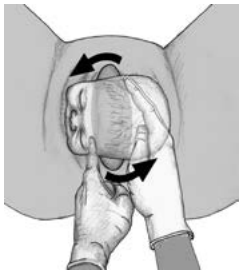


Figure 1.49

If these steps don't free baby's shoulder — breathe in, stay calm and do them again from the beginning

When shoulder released

- Support baby as it births — it will be slippery so use gentle but firm grip. Can use warm towel
- See Labour and birth After the birth (page 182)

Twin birth

Emergency — rare in remote context but may happen if woman hasn't had antenatal care or can't get to hospital in time

Complications include

- Preterm labour
- Breech presentation (one or both babies not coming head first)
- Cord prolapse (cord comes before either baby)
- Foetal distress, especially of second baby
- Postpartum haemorrhage (woman bleeds heavily after birth)
- If not known to be twin pregnancy and oxytocin is given after first twin is born the cervix may close before the second twin is born

Do first

- Call for help — get **midwife/doctor/obstetrician** on speaker phone, if none locally
- Find support people — if possible female ATSIHP or older women familiar with birthing
- Reassure woman and explain what is happening. Have someone stay with her for support
- Get ready to send to hospital
- Do first check in labour — see Labour and birth (page 177)

Ask helper to get equipment

- 1–2 people to look after each baby
- 2 sets of birth and resuscitation equipment (page 2)
- 2 oxygen sources
- 2 suction attachments
- 2 sets of 2 cord clamps labelled 'Baby 1 and Surname' and 'Baby 2 and Surname'
- 2 sets of 2 name bands, labelled 'Baby 1 and Surname' and 'Baby 2 and Surname'
- **Oxytocin** IM — 10 international units single dose
- **Oxytocin** infusion — 40 international units in 1L normal saline, infusion pump if available — **Do not** start oxytocin until after **second baby born and placenta/s delivered**

If in early stages of labour

- **Medical consult** about stopping labour (page 55)
- Make sure woman has emptied her bladder
- If membranes rupture — check for cord prolapse
  - If cord seen at vulva or felt just inside vagina — see Cord prolapse **straight away** (page 65)

If labour continues

- Follow Labour and birth (page 176) *AND*
  - Put in second IV cannula — largest possible
  - Give **normal saline** at 125mL/hr
  - **Do not** let woman eat or drink anything — may need operation

The birth

Birth of first baby

- If baby coming head first — see Birthing baby (page 179)
- If baby is coming bottom or foot first — see Breech birth (page 60) *THEN* continue with this protocol
- **Do not** give oxytocin until after second baby born
- **Do not** deliver placenta/s until after second baby born
- Clamp and cut cord
  - Some cultures like a long cord left on baby. Ask mother or support person
  - Clamp cord on first twin within 1 minute — risk of losing blood to other twin if only 1 placenta (monochorionic)
  - Put 2 metal clamps ('Baby 1') on cord 5cm apart, at least 10cm from baby's abdomen — Figure 1.50
  - Cut cord **between** the 2 clamps with sterile blunt-end scissors
  - **Do not** take clamps off after cutting

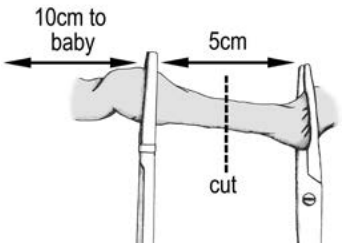


Figure 1.50

- Dry and wrap baby. Give to helper to assess, resuscitate (page 7), keep warm (page 203) as needed — see Labour and birth Immediate care of baby (page 182)

Check — after birth of first baby

- Woman's pulse and BP
- Vaginal blood loss
- Colour of liquor
- Try to work out position of second baby by palpating uterus, if skilled — head or bottom first
- Feel for contractions — often stop for up to 5 minutes after first birth

Do

Midwife/obstetrician consult about

- Findings and further management
- IV fluids
- Whether to do vaginal exam, if skilled

Urgent medical/obstetrician consult if

- Woman bleeding heavily

If no contractions after 5 minutes

- Check vaginal blood loss at least every 5 minutes
- Keep woman on her left side, reassure her and keep her comfortable
- If vaginal blood loss small — wait for evacuation to hospital
- Consider asking mother to breastfeed Baby 1 to stimulate contractions

If labour continues

- If baby coming head first — see Birthing baby (page 179)
- If baby coming bottom or foot first — see Breech birth (page 60)
- If another part of baby felt — **urgent medical consult**
- If membranes rupture check for cord prolapse —
  - If cord seen at vulva or felt just inside vagina — put/keep fingers in vagina and push baby away from cord — see Cord prolapse **straight away** (page 65)

After birth of second baby

- Clamp and cut cord
  - Cut the same length as for first twin
  - Wait at least 1 minute and until cord stops pulsating if possible
  - Put 2 metal clamps ('Baby 2') on cord 5cm apart, at least 10cm from baby's abdomen — Figure 2.44
  - Cut cord **between** the 2 clamps with sterile blunt-end scissors
  - **Do not** take clamps off after cutting

- Dry and wrap baby and give to helper to assess, resuscitate (page 7), keep warm (page 203) as needed — see Labour and birth Immediate care of baby (page 182) and follow rest of care for baby
- Check there isn't a third baby
- **If no more babies** — give **oxytocin** IM — 10 international units single dose in thigh
- Deliver placenta or if 2 placentas deliver both together
  - If **oxytocin given** — see Delivering placenta by controlled cord traction (page 184)
- After placenta/s delivered start **oxytocin** infusion — 40 international units in 1L **normal saline** at 250mL/hr
  - If no infusion pump — monitor carefully
  - **Medical consult** about how long to continue
- Collect cord blood (page 183) from both cords and label 'Baby 1 and Surname' and 'Baby 2 and Surname'
- While waiting for evacuation — see Newborn care (page 199) and Care of mother — first 24 hours after birth (page 190)

Retained placenta

In remote setting treat as retained placenta if placenta is not delivered (still inside uterus) after 30 minutes despite controlled cord traction or maternal effort

Red Flags — Urgent Medical Consult

- If heavy bleeding at any time — 500mL or more (1 soaked pad holds about 100mL)

If placenta retained

Do not

- **Do not** let woman eat or drink anything — may need operation — consider IV fluids

Check

- Was oxytocin given after birth of baby
- Vaginal bleeding — amount and colour
- Where top of fundus (uterus) is
- Has woman passed urine, does bladder feel full
  - If unable to pass urine — may need indwelling urinary catheter (page 327)
- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL

Do

- Put baby to mother's breast and encourage baby to start sucking
- If woman had oxytocin — try controlled cord traction (page 184) again
  - If cord has lengthened — may need to move clamp closer to vulva
- If woman has not had oxytocin — give **oxytocin** IM — 10 international units, single dose into thigh
- **Wait 5–10 minutes for signs that placenta has separated from wall of uterus and descended** — trickle or gush of blood from vagina, lengthening of cord
  - If signs of separation — try controlled cord traction (page 184)
  - If no signs of separation — try controlled cord traction (page 184) *AND* take extra care to guard uterus by applying counter traction — put second hand above pubic bone with palm facing away from you. Use arch formed between thumb and first finger to apply

counter traction. Push in and up to support uterus and hold it in place — Figure 1.51

- If the cord snaps before the placenta has been delivered — check if it is in the vagina
  - If it is — ask the mother to bear down and attempt to extract the placenta
  - If unable to deliver the placenta — manage as if the placenta is still not delivered

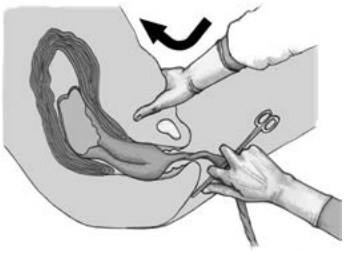


Figure 1.51

If placenta delivers

- See Checking the placenta (page 188) and Rubbing up a contraction (page 187)
- Measure/estimate blood loss — save and weigh pads and clots — 1g increase = 1mL loss
  - If more than 500mL loss or ongoing bleeding — **medical consult** — see Primary postpartum haemorrhage (page 77)

If placenta still not delivered

Reassure woman and explain that you need to do a vaginal exam because her placenta has not come out — vaginal examination can be painful. Gain consent and only do if skilled

Do First

- **Medical consult** — may need to go to hospital
- Put in IV cannula — largest possible, if not already in
  - Start **normal saline** 1L at 125mL/hr
- Put in indwelling urinary catheter (page 327) if not already in place

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- Measure/estimate blood loss — save and weigh pads and clots — 1g increase = 1mL loss

Do

- POC test for Hb
- Put in second IV cannula — largest possible, if not already in
  - If you can't get IV cannula in — put in intraosseous needle
- Give **pain relief**
  - **Nitrous oxide** if available
  - *AND/OR* **Morphine** IV — adult 1–2mg. **Naloxone must be available**

- If skilled and woman consents — do vaginal exam
  - Use sterile gloves and water-based lubricant or obstetric cream
  - With your fingers follow cord up into vagina
  - If woman uncomfortable — stop examination and give more pain relief
  - If you feel placenta in vagina or cervix — grasp and carefully pull out
  - If you feel cord going through cervix — stop
- If placenta retained — **do not** try controlled cord traction again
- **Medical consult** to send to hospital
  - If ongoing heavy bleeding or delay in evacuation — start **oxytocin** infusion (40 international units in 1L **normal saline**) at 250mL/hr. If no infusion pump — monitor carefully
- Continue observations especially blood loss until sent to hospital
  - If more than 500mL blood loss — see Primary postpartum haemorrhage(page 77)
- If **placenta delivers** — see Checking the placenta (page 188) and Rubbing up a contraction (page 187)

Primary postpartum haemorrhage

Related protocols — Bimanual and aortic compression (page 87), Labour and birth — rubbing up a contraction (page 187)

- **Urgent problem — heavy bleeding after birth is an emergency — woman can die from blood loss**
- Vaginal blood loss of 500mL or more within first 24 hours after birth OR any bleeding that causes signs of shock. 1 soaked pad is equal to approximately 100mL of blood
  - Empty contracted uterus does not bleed heavily
  - Heavy bleeding can have more than one cause
  - Women with anaemia (page 135) are at greater risk
- Continuous slow bleeding can result in a large blood loss over time
- Blood loss is often underestimated — woman can lose 1,200–1,500mL of blood before showing any signs of shock

Causes

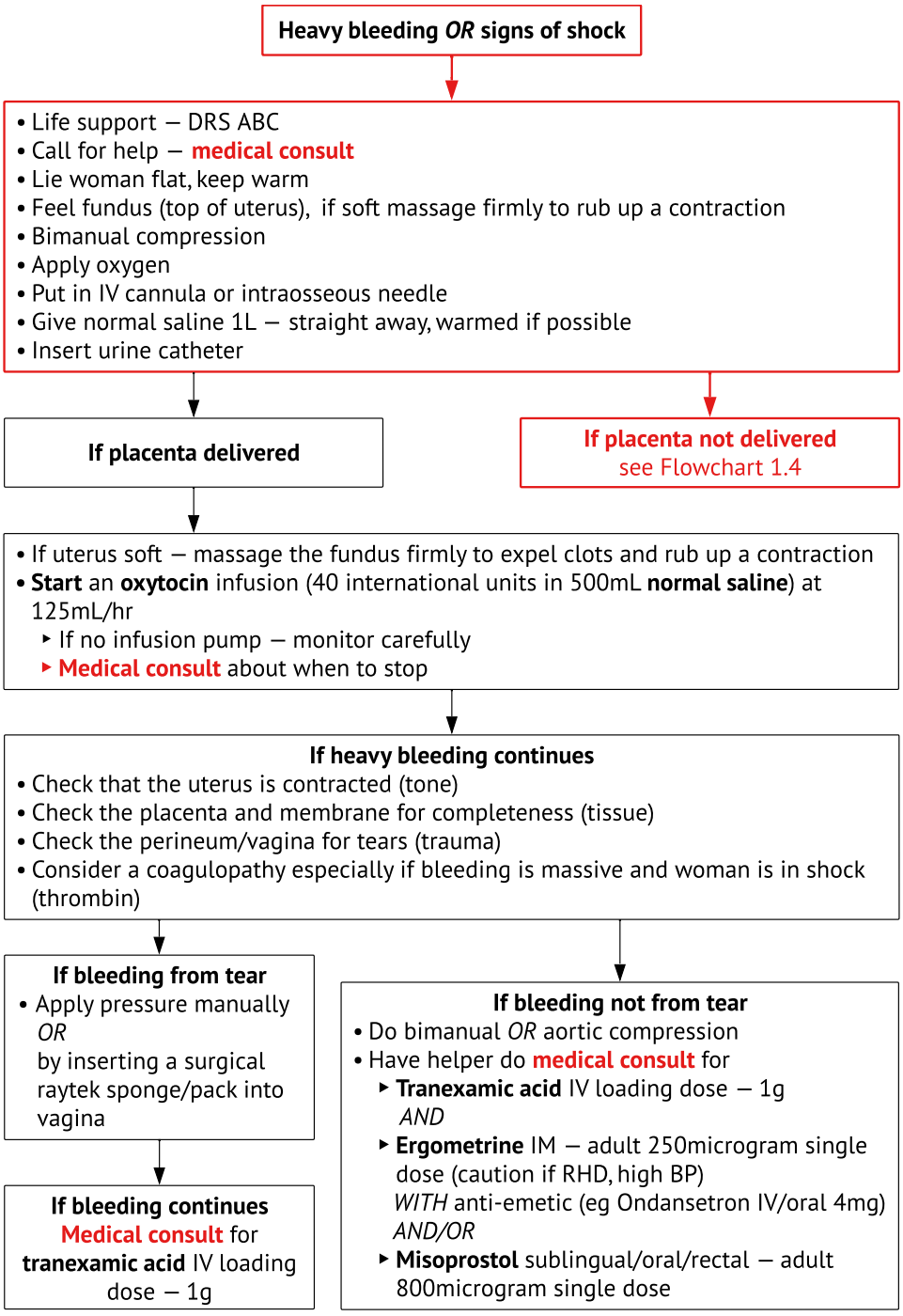
Common causes can be grouped under the "4 Ts"

- Tone
  - Atonic uterus (uterus not contracted) — most common cause. Can be due to oxytocin not given after birth or full bladder stopping uterus from contracting properly
- Trauma
  - Tears of the birth canal — perineum, vagina, cervix, uterus
  - Rupture of uterus
  - Broad ligament haematoma (bleeding into tissues next to the uterus from tears in the cervix, upper vagina or uterus)
  - Uterine inversion (page 85)
- Tissue
  - Placenta not delivered
  - Retained products (placenta delivered but placental tissue, membrane or clots still inside uterus)
- Thrombin
  - Woman has a disorder that prevents blood from clotting normally. Can develop because of massive blood loss or can be pre-existing

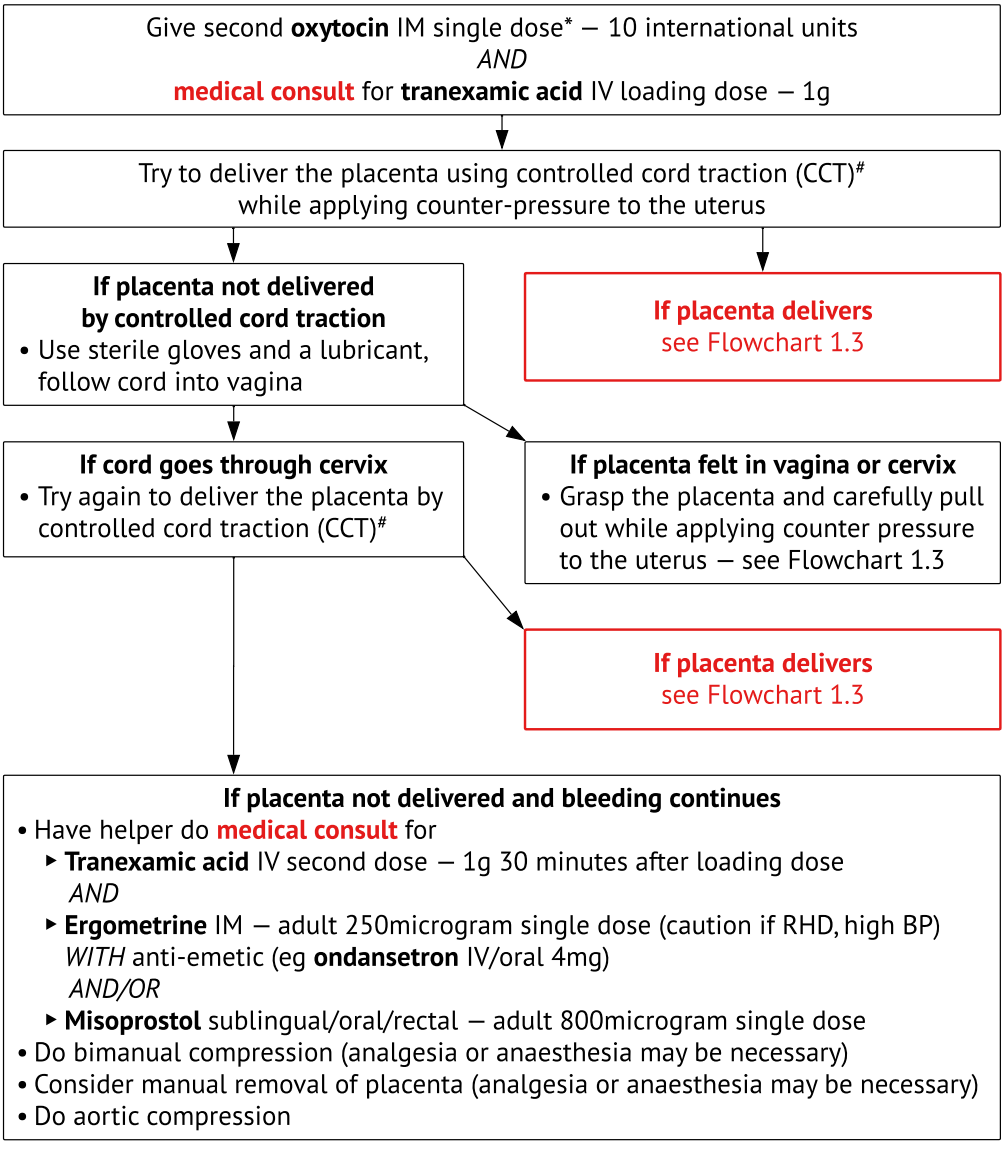
Do first

- Make sure there is only 1 baby by feeling fundus (top of uterus) — should be no higher than umbilicus.
  - If second baby — **medical/specialist consult**

Flowchart 1.3 Management of primary postpartum haemorrhage



Flowchart 1.4 If placenta not delivered within 30 minutes of birth



* A first dose of oxytocin should have been given with delivery

If cord snaps whilst doing CCT, then feel for placenta and if in vagina or cervix, grasp the placenta and carefully pull out while applying counter pressure to the uterus

Check

- Uterus has contracted, pulse, BP, vaginal blood loss — every 5 minutes while bleeding *THEN* every 15 minutes
  - Put pad between woman's legs. Change pad at each check. Save and weigh all pads — 1g increase = 1mL loss
- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL

Do

- POC Test — Hb
- Apply non-pneumatic anti-shock garment if available
- **Medical consult** about further management and sending to hospital
- Examine cervix, vagina, perineum for tears. Manage what you find — see Tears of the birth canal (page 193)

While waiting for evacuation

- Keep baby with mother and encourage to breastfeed to stimulate contractions
- Make sure clinic staff member stays with woman all the time
- If placenta delivered — send with woman
  - Make sure it is labelled
  - Double bag then put in pathology transport container with ice brick
- If **bleeding settles** and uterus stays contracted
  - Check vaginal blood loss, fundus, pulse, BP every 15 minutes
  - Continue **oxytocin** infusion (40 international units in 1L **normal saline**) at 250mL/hr
  - If no infusion pump — monitor carefully
  - If evacuation delayed — **medical consult** about how long to continue
  - Give IV fluids as directed by doctor
  - **Do not** let woman eat or drink anything — may need operation
  - Work out blood loss — weigh pads — 1g increase = 1mL loss
  - Continue immediate postnatal care for mother (page 190) and baby (page 199)
  - Continue observations until evacuated

Secondary postpartum haemorrhage

Abnormal vaginal bleeding between 24 hours and 6 weeks after birth

Causes

- Retained products (part of placenta or membranes left inside uterus)
- Endometritis (infection in uterus)
- Other — cervical polyps, cancer, blood clotting disorders
- May be more than 1 cause

Red Flags — Urgent Medical Consult

- Very heavy bleeding (bright with large clots)
- Severe abdominal pain
- Signs of shock
- Suspected infection in uterus
- Possible retained products

Do not

- **Do not** let woman eat or drink anything — may need operation — consider IV fluids

Check first

- **Signs of shock**
  - Increased RR
  - Pulse weak and fast (more than 100bpm) or difficult to feel
  - Central capillary refill longer than 2 seconds
  - Pale, cool, moist skin
  - Restless, confused, drowsy, occasionally unconscious
  - Low BP for age or relative to person's previously recorded values

Do first — if emergency

If vaginal blood loss of 500mL or more OR any bleeding that causes signs of shock

- **Medical consult**
- Give **oxygen** to
  - Target O_2 sats 94–98%
  - *OR* if moderate/severe COPD — 88–92%

- Put in IV cannula — largest possible
  - Give **normal saline** — 1L straight away
  - If you can't get IV cannula in — put in intraosseous needle
- Put in indwelling urinary catheter
  - Do hourly measures — aim for 0.5mL/kg/hr
- Give **oxytocin** IM — 10 international units, single dose
- Feel uterus. If soft/boggy — see Rubbing up a contraction (page 187)
- Prepare **oxytocin** infusion (40 international units in 1L **normal saline**)
- If directed to by doctor — give **misoprostol** rectal — 800microgram, single dose

Look — in file notes

- Date and details of birth — type of birth (more common after lower uterine caesarean section and if there was chorioamnionitis during labour) — estimated blood loss, were placenta and membranes thought to be complete, any perineal tears or episiotomy, any complications, eg infections during or after birth
- Last Hb and vaginal swab results
- Contraception used since birth — especially Depo-Provera or ENG-implant. Could it be causing bleeding
- Medical history, allergies, medicines

Ask

- Bleeding — how much, what colour, bad smell, any clots, has it stopped since birth
- When did bleeding become heavy
- Did bleeding start after sex
- Could this be first period
- Did anything cause bleeding to start (eg injury)
- Pain — where, when did it start
- Any other symptoms — fever, chills, nausea, vomiting

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- Urine for U/A, send for MC&S
- Blood loss
  - Check woman's clothing
  - Is blood coming from vulva, vagina or rectum
  - Colour — bright, dark
  - Clots — how big, any smell

- Measure and record blood loss
  - Get a pad and weigh it. Put pad between woman's legs. Change pad each time you check
  - Save and weigh all used pads — 1g increase=1mL loss
  - 1 soaked pad holds about 100mL
- Head-to-toe exam — with attention to
  - Abdomen (STM, page 332) — feel for tenderness, rebound, guarding
  - Uterus — tender, painful, hard or soft. If soft/boggy — see Rubbing up a contraction (page 187)
- Speculum exam if skilled
  - Look at vulva and perineum for sores, bleeding, infected tears
  - Try to see where bleeding coming from — may need to swab out vagina
  - Is cervix open or closed. If open — remove any tissue caught in cervix using sponge forceps. Save all clots and tissue
  - High vaginal swab for MC&S and endocervical swabs for MC&S, gonorrhoea, chlamydia and trichomonas NAAT
  - Look for infected tears of vagina or cervix
- Bimanual exam, if skilled
  - Tenderness, masses, size of uterus, is cervix painful when moved

Do

- POC test — Hb
- Take blood for serum beta hCG, blood cultures before giving antibiotics
- If well, no signs of infection, only small amount of blood loss (less than 500mL) — **medical consult** about treating in community
- See — Childbirth postpartum infections (page 88)

Send to hospital if

- Heavy bleeding and/or shock
- Unwell and/or temp more than 38°C
- Severe abdominal pain
- Possible retained products
- Diagnosis uncertain

Medical consult about antibiotics

- Give **amoxicillin** *OR* **ampicillin** IV — adult 2g, single dose *AND* **metronidazole** IV — adult 500mg, single dose *AND* **gentamicin** IV — doses (page 364) — single dose
- *THEN* **amoxicillin** *OR* **ampicillin** IV — adult 1g, every 6 hours (qid) *AND* **metronidazole** IV — adult 500mg, every 12 hours (bd)
- If delay in sending to hospital of more than 24 hours — give **gentamicin** once a day — doses (page 364) if directed by doctor
- If allergy to penicillin — **medical consult**

While waiting for evacuation

- Explain to woman what is happening and why
- Consider appropriate escort for baby, who will go with mother
- Continue management as directed by doctor

Uterine inversion

Uterus turns inside out after birth — appears as red raw mass in vagina or coming out of birth canal. Uterus must immediately be pushed back up vagina into correct position

Consider in woman with sudden collapse or shock after birth

Red Flags — Urgent Medical Consult
• Signs of shock • Severe, constant abdominal pain • Severe bleeding

Do not

- **Do not** remove placenta if still attached to uterus
- **Do not** give oxytocin until uterus replaced

Check

- **Signs of shock**
  - Increased RR
  - Pulse weak and fast (more than 100bpm) or difficult to feel
  - Central capillary refill longer than 2 seconds
  - Pale, cool, moist skin
  - Restless, confused, drowsy, occasionally unconscious
  - Low BP for age or relative to person's previously recorded values
- Check for top of fundus (uterus) abdominally
  - If severe inversion — can't be felt
  - If mild inversion — feels 'dimpled' in fundal area
- Check for red raw mass in vagina or coming out of birth canal

Do

- Call for help — have helper do **medical consult** to send to hospital straight away
- Resuscitate mother — **give oxygen** to
  - Target O_2 sats 94–98%
  - *OR* if moderate/severe COPD — 88–92%
- Put in IV cannula — largest possible, if not already in
- Give IV fluids as directed by doctor
- Try manual replacement of uterus

Manual replacement

- Put on sterile gloves and cover with obstetric cream or water-based lubricant
- Gently grasp fundus of uterus in one hand, palm up — Figure 1.52
- Put hand inside vagina and push fundus up the vagina toward the umbilicus — Figure 1.53. This may take a few minutes of constant firm pressure

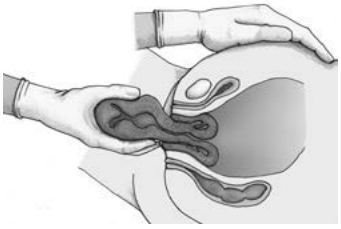


Figure 1.52

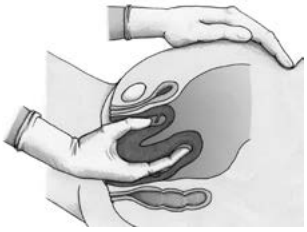


Figure 1.53

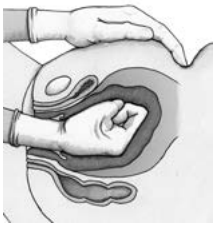


Figure 1.54

- If uterus returns to normal position — leave hand inside until you feel a firm contraction — Figure 1.54
  - Give **oxytocin** IM or slow IV push — 10 international units straight away, single dose
  - *THEN* Start **oxytocin** infusion (40 international units in 1L **normal saline**) at 250mL/hr over 4 hours
  - If no infusion pump — monitor carefully
  - **Medical consult** about how long to continue

Further management

- If total blood loss 500mL (2 cups) or more OR if signs of shock — see Postpartum haemorrhage (page 77)
  - 1 soaked pad holds about 100mL
- If continuing to bleed heavily — perform bimanual compression (page 87)
- Once replaced — keep uterus contracted
  - Massage uterus
- Put in indwelling urinary catheter (page 327)
- Explain to woman what has happened and reassure her
- **Medical consult** about
  - Pain relief
  - Antibiotics — **cefazolin** IV — adult 2g, single dose *AND* **metronidazole** IV — adult 500mg, single dose
  - If allergy — **medical consult**
- Continue observations until evacuated to hospital

Bimanual and aortic compression

Life-saving emergency procedures to slow bleeding from uterus when other procedures haven't worked

- Make sure you follow steps in Primary postpartum haemorrhage (page 77) — use bimanual or aortic compression to control ongoing bleeding

Do

- Explain to woman and support people what you are doing and why it is urgent
- Continue until bleeding controlled or emergency help arrives

Bimanual compression

Puts pressure on uterus to slow bleeding

- Consider pain relief
- Put on sterile gloves and cover 1 hand with lots of water-based lubricant
- Make fist with lubricated hand. Put into lower vagina, push firmly against uterus — Figure 1.55
- Other hand on external abdomen lifts and pulls uterus forward, pushing it down over fist — Figure 1.55

Figure 1.55

Aortic compression

Puts pressure on abdominal aorta to slow bleeding.
Use when all other measures have failed

- Have helper find femoral pulse in woman's right groin
- Use bent fingers (knuckles) of dominant (main) hand
- Press down on abdomen just above and slightly to left of umbilicus (belly-button) — Figure 1.56
  - Feel for pulsations to check you are over aorta
- When enough pressure is applied to compress aorta between your fist and woman's spine the helper will feel femoral artery pulse disappear

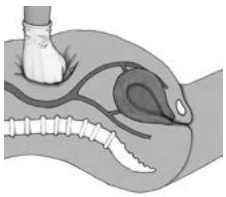


Figure 1.56

Childbirth postpartum infections

- If woman unwell and/or febrile in first 6 weeks after childbirth — examine carefully
- Sepsis can be subtle in onset and women may deteriorate (page 14) rapidly

Red Flags — Urgent Medical Consult

- **Sepsis — signs and symptoms can include**
  - High or low temperature
  - Fast breathing
  - Fast pulse
  - Low BP or dizziness
  - Confusion and/or agitation
- Heavy vaginal bleeding

Common sites of infection

Can be more than 1 type of infection

- Uterus (page 89) — endometritis is the most common cause of postnatal infection
- Urinary tract (STM, page 486)
- Breast (page 238) — mastitis
- Wound (page 92) — perineal or abdominal
- Chest (STM, page 432)

Ask

- Breastfeeding issues (page 238)
- Symptoms of chest infection
- Bowel or urine problems
- Vaginal bleeding
- Other symptoms not related to pregnancy (eg sore throat, influenza)

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- U/A
- Head-to-toe exam — with attention to
  - Breasts — tenderness, red areas, lumps in breast or axilla
  - Lungs — observe and listen to breathing
  - Abdominal assessment (STM, page 332) — check wound if caesarean

- Perineum — sores (page 268) episiotomy, tears, offensive discharge, heavy bleeding
- Signs of deep vein thrombosis or pulmonary embolism (page 165)

Do

- If signs of infection — see appropriate protocol
  - Uterus infection (endometritis) — **most common cause of postnatal infection**
  - Abdominal and perineal wound infections (page 92)
  - Urinary tract (page 168)
  - Breast (page 238) — mastitis
  - Wound (page 92) — perineal or abdominal
  - Chest (STM, page 432)
- **Medical consult** — for antibiotic choice based on regional sensitivities
  - Consider blood cultures

Uterus infection (endometritis)

Problems

- May be heavy vaginal bleeding
- Sepsis — bacteria infecting the uterus enters bloodstream
- If woman is or starts bleeding heavily — see Secondary postpartum haemorrhage (page 81) **straight away**

Causes

- Retained products (part of placenta or membranes left inside uterus)
- Infection in vagina (eg STI, GBS)
- Infection introduced during or after birth (eg caesarean section, forceps, manual removal, perineal tear)

Look — in file notes

- Date and type of birth
- Did placenta and membranes appeared complete, perineal trauma (eg tears), other complications
- Did woman have high temp after birth
- Last vaginal swab results
  - If STI in pregnancy — were woman and partner/s treated
- Perinatal infection in baby

Ask

- Pain — where, what type, when did it start
- Vaginal loss — how much, has it increased, colour, any clots, has bleeding stopped since birth
- Vaginal discharge — brown, offensive smell
- If has had sex since birth, was there any pain
- Any other symptoms — may complain of
  - Feeling unwell, no energy
  - Fever, chills
  - Nausea, vomiting, poor appetite
  - Difficulty breathing, chest pain, abdominal pain, pain in legs

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- Head-to-toe exam — with attention to
  - Uterus — feel for height of fundus, tenderness, bulkiness, firm or soft, if central or to one side
  - Vaginal loss — how much, colour, smell, any clots — put pad between woman's legs. Change pad each time you check. If bleeding — save and weigh all pads — 1g increase = 1mL loss
- Speculum exam (page 287), if skilled — cervix open or closed
- Bimanual exam, if skilled — tenderness, masses, size of uterus, is cervix painful when moved
- Full STI check (page 246)

Do

- **Medical consult** about sending to hospital
- **Need to send to hospital if**
  - Very unwell and/or signs of sepsis (page 14)
  - Severe abdominal pain
  - Bleeding heavily and/or in shock
  - Possible retained products
  - Vomiting up medicines
  - Nobody to help look after her and her baby
  - Diagnosis uncertain

If sending to hospital

- Put in IV cannula — largest possible, insert 2 if time
  - Take blood cultures before starting antibiotics — send in with woman
  - Start **normal saline** 1L at 125mL/hr

- **Medical consult** about antibiotics. Give **straight away**
  - **Ceftriaxone** IM/IV — adult 1g, single dose

AND **azithromycin** oral — adult 1g, single dose

AND **metronidazole** IV — adult 500mg, single dose

- If delay in sending to hospital of more than 24 hours and directed to by doctor — give **gentamicin** IV once a day — doses (page 364)
  - If allergy to penicillin — **medical consult**
- **While waiting for evacuation**
  - Give pain relief (STM, page 326) if needed
  - **Do not** let woman eat or drink anything — may need operation
  - Encourage to continue to breastfeed baby, if possible
  - Continue observations until evacuation

If woman staying in community

- **Medical consult** about antibiotics
  - Give **azithromycin** oral — adult 1g, single dose *AND* **ceftriaxone** IM — adult 500mg, single dose mixed with **lidocaine (lignocaine) 1%**
  - Next day give **amoxicillin-clavulanic acid** oral — adult 875+125mg, twice a day (bd) for 10 days
  - Day 8 give **azithromycin** oral — adult 1g single dose
  - If allergy to penicillin — **medical consult**
- Give pain relief (STM, page 326) if needed
- Assess daily for 5 days (or until antibiotics finished) — make sure there is support and help at home
- Tell woman to come back to clinic straight away if fever, vomiting, pain, heavy bleeding
- If woman not improving after 1–2 days of treatment — **medical consult**. May need to go to hospital
- Check swab and urine results
  - If positive STI — see Pelvic inflammatory disease (page 272) for follow-up
  - Remember to treat partner/s

Abdominal and perineal wound infections

Do

- Wound swab, MC&S
- **Medical consult** about
  - Removing any stitches
  - Antibiotics — give **amoxicillin-clavulanic acid** oral — adult 875+125mg, twice a day (bd) for 5 days
  - If allergy — **medical consult**
- Give pain relief (STM, page 326) if needed
- Assess daily, clean and dress wound until healed
- If perineal wound — keep area as clean and dry as possible
  - Encourage perineal hygiene — shower or wash perineal area twice a day. Change pads often

Follow-up

- If wound not improving after 1–2 days of treatment — **medical consult**

2. Pregnancy

Introduction — pregnancy

Antenatal care must respect the woman's cultural beliefs and social situation. It needs to be flexible, friendly, non-threatening and accessible to all women, including young women. Antenatal care aims to improve the health of the pregnant woman and her baby by monitoring progress, detecting and managing problems and providing education about pregnancy and birth. The earlier antenatal care starts, the better the outcome. Antenatal care in remote areas may also include supporting women who have additional life stressors.

Problems that can adversely affect pregnancy outcomes include

- Medical issues — UTI, STI, anaemia
- Chronic diseases — diabetes, kidney disease, RHD
- Social and emotional issues — history of depression, anxiety or other mental health concerns, limited family or social support, domestic/family violence
- Environmental issues — crowded housing, mobile lifestyle, poor nutrition, access to affordable nutritious food
- Substance use — smoking, alcohol, kava, other drugs
- Pregnancies in young women
- Late presentation to health services.

Remote area health services can have trouble accessing skilled women's health providers. Providing antenatal information, education and care can be shared between a variety of providers including midwives, doctors, nurses, ATSIHPs, Aboriginal community workers (ACWs), and community-based workers such as Strong Women, Strong Babies, Strong Culture (SWSBSC) program workers.

Use an interpreter if needed, and if available, written materials in language. To avoid shaming if woman has low literacy use material with illustrations and photos relevant to the community (eg foods that can be found in the community store).

Traditionally, Aboriginal women acknowledged a pregnancy when the baby's movements were felt at around 16–20 weeks pregnant. They believed that at this time a spirit child entered the woman. This spirit may have come from a deceased relative, from certain places in the country, or from eating certain food. Traditionally, women didn't talk much about pregnancy until it was obvious, although close family members often knew. Secrecy and privacy are still important to some women so they

may give another reason for seeking medical care when they really want confirmation of a pregnancy. Practitioners need to be sensitive to non-verbal cues and offer a urine pregnancy test in these circumstances.

Women now tend to present for antenatal care earlier than in the past and many come in the first trimester. However, some women still don't present until they feel the baby moving. Young women may present late, as they may not understand what is happening or they may feel frightened, embarrassed or shamed about being pregnant.

A small number of women don't come for antenatal care at all. Reasons for not presenting may include feelings of shame or guilt due to social circumstances around the pregnancy (eg sexual assault, 'wrong way' marriage), because they believe things are going fine or due to previous bad experience with the health service. Other health staff may hear a woman is pregnant from an ATSIHP, ACW, SWSBSC worker or from another culturally appropriate woman in the community. Respect the woman's privacy and her reasons for not presenting. Talk with the ATSIHP or ACW about the best way to approach her to offer confirmation of the pregnancy and antenatal care.

Preconception care

Health check for women planning pregnancy

- Find and treat problems that might put woman or baby at risk
- Make sure woman's medical problems are well managed
- Give education on health, nutrition, fertility
- Investigate any problems, eg fertility problems (trouble getting pregnant), recurrent miscarriages
- Best done **at least** 3 months before woman tries to become pregnant, if possible
- Offer before stopping contraception or removing Long Acting Removable Contraception (eg ENG-implant) — for advice regarding return of fertility — see Long Acting Removable Contraception (page 350)
- Can offer opportunistically to any woman of childbearing age
- Important to be discreet and private. Woman may not want others from the community knowing she is trying to get pregnant

Check

- History, examination, tests as for first antenatal visit (page 107)
- Adult Health Check (STM, page 222) — include STI check (page 246), cervical screening (page 297) if due
- Urine pregnancy test (page 99)
- Immunisation status

Do

- Ensure follow-up of problems (page 216) from last pregnancy completed
  - If woman had GDM and 75g OGTT not done after last pregnancy — do now

Medical consult if

- High risk of baby with anomaly — previous baby with congenital anomaly or family history of inherited disorder
- Previous obstetric (pregnancy) issues that could affect future pregnancy or birth, eg baby with neural tube defect, multiple pregnancy, several miscarriages
- More than 35 years old, especially if first baby
- Chronic medical or mental health condition
- Taking any prescription medicine
- History of substance use

Talk with woman about

- General health issues — especially if first pregnancy or woman has medical, mental health or substance use issues
- Optimising control of chronic conditions — high BP, diabetes, asthma, epilepsy, depression
- Encourage healthy weight (BMI 20–25) before getting pregnant
- Encourage starting of folic acid supplement
  - Give **folic acid** oral — 0.4mg in multivitamin designed for pregnancy once a day until 12 weeks pregnant
  - *OR* if woman has diabetes, epilepsy, BMI over 30 or had previous baby with neural tube defect — give **folic acid** oral — 5mg, once a day until 12 weeks pregnant

Immunisations

- If rubella serology non-immune or unclear — offer MMR
  - Advise not to get pregnant for 28 days after MMR
  - **Do not** give if woman pregnant
- If not immune to varicella — **medical consult** about immunisation
  - **Do not** give if woman already pregnant
- If influenza immunisation due — offer immunisation
  - Pregnant women are at high risk of complications from flu and COVID
- Offer any other immunisations due, if unsure call PHU for advice

Menstrual cycle

- Best times to have sex (try for baby) — see fertile times in menstrual cycle diagram (page 310)
  - Ovulation usually 2 weeks after first day of the start of last period
- Give advice about stopping contraception

Signs and symptoms of pregnancy

- Good opportunity to talk with woman about why antenatal care is important
- Tell her to come to clinic as soon as she thinks she might be pregnant

Family and social circumstances

- Talk with woman about family help and support, any domestic/family violence issues
- Financial capacity to look after baby, cost of essential baby items, Centrelink payments
  - Remind woman to attend Centrelink and have 100 points of identification ready

Education

- See Antenatal education (page 122)

Follow-up

- Arrange to see woman again and talk about test results, any other worries she is having in relation to trying to get pregnant
- **Medical follow-up** if not pregnant
  - After 12 months of regular unprotected sex
  - *OR* after 6 months if over 35 years old
  - See Infertility (page 306)

Supporting resources

- RANZCOG genetic screening guidelines

Pregnancy testing

- **Urine test** positive 2–3 weeks after woman becomes pregnant — about 4 weeks after last period. Less reliable before this and at 8–12 weeks after missed period
- **Blood test** can be used to check urine test and to work out how much human chorionic gonadotropin hCG (pregnancy hormone) present
  - hCG increases in early pregnancy
  - Negative result — not pregnant or not enough hCG to be detected at time of test
- Do test in private place — may not want anyone else to know result or that she is having pregnancy test

Pregnancy testing is done

- When woman requests it
- After delayed or missed period/s
- Before starting new contraception, after late contraception — see Quick Start method (page 338)
- To help exclude pregnancy in vaginal bleeding
- To help exclude ectopic pregnancy in woman with lower abdominal pain
- Before giving certain medicines or immunisations

Ask

- About last period — test may not be reliable if less than 4 weeks ago
- What result she hopes for — may or may not want to be pregnant

Do

- Offer STI check — see STI checks for women (page 246) STI checks for young people (page 244)

For urine pregnancy test

- Best specimen is first morning urine, but can be done any time
- Ask woman for small urine sample
- Use test as directed on packet
- Check result carefully then tell woman result

For blood pregnancy test

- Collect 5mL venous blood in plain tube
- Request hCG on pathology form
- Tell woman when to come back for result

Follow-up

Positive pregnancy test

- Talk with woman about result — woman may want to talk about her options or may need time to think about result and talk with partner and/or family
  - Parenting — have and keep baby — **refer** for antenatal care
  - Have baby and give to someone else (eg family member) to adopt or foster — **refer** for antenatal care
  - If pregnancy unwanted or unsure — see Unplanned pregnancy (page 101)
- If not experienced in providing pregnancy counselling — refer to doctor, social worker, family planning, local counselling service or women's health service

Negative pregnancy test

- If woman doesn't want to become pregnant — talk about contraception (page 331)
- If planning a pregnancy — see Preconception care (page 96)
- If having problems getting pregnant — see Infertility (page 306)
- Tell woman to come back for repeat test in 2 weeks if not had a period

Unplanned pregnancy

- Half of all pregnancies in Australia are unplanned
- Many women need time, information and support to make a decision about their pregnancy
- Important to respect whatever decision is made. In Australia, women have the right to choose whether to continue or end a pregnancy
- If woman is legally able to give consent — the decision about pregnancy is hers alone
  - She can tell you who else should know (eg family, partner, health carer)
  - She can't be coerced (forced) to make a particular decision
- Don't judge the woman
  - Be private, confidential, objective and supportive
  - Aim to support any decision of the woman and provide relevant information and care
- There may be sensitivities about this pregnancy — concerns about
  - Woman being too young
  - Ability to care for baby
  - Domestic/family violence, pregnancy from sexual assault
  - Pregnancy from wrong skin relationship
- Beliefs and attitudes about pregnancy and termination of pregnancy vary among women. Respect these beliefs

Red Flags — Urgent Medical Consult

- All women wanting termination of pregnancy

Do

- **Refer immediately** to appropriate agency and follow your organisation's procedures if
  - Woman would not have been able to consent to sex
  - Woman is a survivor of domestic/family violence or sexual assault
  - Mandatory reporting is a legal requirement
- Refer to someone suitable in your clinic or to appropriate service if
  - You don't have enough knowledge
  - You have strong beliefs that are different to the woman's and you can't be objective
  - Woman doesn't want to be assessed in her community
- Talk about main options — don't always need to work out pregnancy dates before talking about choices
  - Continuing pregnancy and becoming a parent
  - Termination of pregnancy (abortion)
  - Adoption or fostering

- Actively work with woman to help her make the best decision — this process can involve listening, talking, sharing information or regular meetings
  - Woman may need some time to come to her decision
  - Encourage her to return to discuss her choices further. Help her decide who to share the decision with
  - Offer formal face-to-face or telephone counselling, if available
- Offer first antenatal (page 105) visit pathology tests
- **Aim for referral within 1 week of making a decision** — regardless of choice or pregnancy dates

Pregnancy choices

Continuing pregnancy

- If woman has decided to continue pregnancy — See Antenatal care (page 107)

Termination of pregnancy (TOP)

- Risks to woman and her future fertility from TOP are less than from pregnancy or birth
- Regional TOP services vary — affected by resources, TOP providers and legislation
- If health professional has conscientious objection to TOP — must immediately refer to another doctor who doesn't object
- Once woman has decided to have TOP
  - **Urgent medical consult straight away** — there are legal time frames for when a TOP can be done. These vary by state/territory
  - Ask doctor what is needed for referral, travel, TOP preparation — differs between providers and states/territories

Do

- Talk with woman about
  - Decision to have TOP — explain the risks and benefits of Surgical Termination of Pregnancy (STOP) and Early Medical Termination of Pregnancy (EMTOP)
  - TOP procedure
  - Referral
  - Follow-up

TOP procedure

- TOP done surgically (operation with anaesthetic) or medically (tablets) — method depends on local services, TOP providers, number of weeks pregnant
  - Medical TOP can be done up to 9 weeks pregnant
  - Surgical TOP best done before 12 weeks pregnant

- Give information on procedure from local provider or use Children by choice website — most TOP providers have consumer information available about TOP
- Usually need to travel to regional or major centre. Although some doctors are licensed to prescribe for medical TOP
  - Help woman organise accommodation and childcare if needed
- Check if woman
  - Wants someone for support — in consult, for travel, after procedure
  - Is able to provide consent

Referral

- TOP provider will need a referral which could include
  - Reason TOP recommended — choice, health including social and emotional
  - Health summary, medicines, Medicare number
  - STI check (page 246) — self-collected vaginal swabs or urine
  - Blood group and antibody screen
  - Pregnancy dates
  - Contraception plan
- Confirm appointment date with TOP provider
- In some states/territories woman can self-refer to provider — need to understand your legislation and policy

Pregnancy dates

- Confirm pregnancy — see Pregnancy testing (page 99)
- Use pregnancy wheel to work out pregnancy dates — see Antenatal care (page 108)
- Single blood test for hCG level is not reliable for pregnancy dating
- Palpable uterus is **not** a good guide for more or less than 12 weeks pregnant
  - Do ultrasound, if available in clinic and skilled — **do not** delay referral if ultrasound not available
  - If unsure of any findings — **specialist/medical/midwife consult**

Follow-up

TOP provider should give woman information on what to expect after TOP

- Woman can be fertile 2 weeks after TOP — contraception (page 331) plan important
- Nausea usually settles in days
- Breast tenderness may last for weeks

- Normal period expected after 4 weeks, if not using hormonal contraception

Review woman 3 weeks after TOP

- Do urine pregnancy test — can remain positive for many weeks
  - If weak positive — retest in 2 weeks
  - If strong positive or other concerns that pregnancy is ongoing — **medical consult**. Very small risk that TOP has failed
- Ask about any problems
  - If heavy vaginal bleeding — see Secondary postpartum haemorrhage (page 81)
  - If fever, discharge or abdominal pain — see Uterus infection (page 89)
- Ask how she is feeling. Women may feel sad after TOP or miscarriage but range of emotions normal — check if woman would like a referral for counselling support
- Ask about current contraception. If nothing — discuss options (page 331)
- Check pathology has been followed up

Contraception plan

- Discuss contraception options (page 331) — LARC is best
- Check what local provider offers — may put in ENG-implant or IUD

Adoption

Adoption is a legal process and varies between state/territories

- Counselling begins well before the birth of child
- Get support from relevant adoption services or departments
- **Medical consult**

Fostering

Fostering can be a legal or informal process. May be short-term, long-term or permanent

- Foster carers are often relatives
- Get advice from relevant foster and kinship care agency or department in your state/territory

Supporting resources

- Family planning alliance Australia website
- Children by choice association website
- Pregnancy birth and baby website
- Intercountry adoption website

Antenatal checklist

Routine antenatal check

Table 2.1

Every visit	First visit — ALSO
Ask • How she is feeling • Physical problems — urine symptoms (page 168), STI symptoms, vaginal loss, bleeding, pain, DVT or PE symptoms (page 165) • Wellbeing — social or emotional issues, risk of family violence • Substance use — tobacco, alcohol, caffeine, other drugs • Baby's movements — 18–20 or more weeks first baby, 15–16 or more weeks next babies **Check** • If any time-specific interventions are due (see next page) • Weight — see *Weight gain in pregnancy* (page 114) • BP • BGL • U/A — midstream urine • Oedema — face, feet, ankles • After 12 weeks – fundal height (page 116) **Do** • Give supplements — see *Antenatal care* (page 110) • Talk with woman about any problems found — see *Management of results* (page 111) • Discuss antenatal education (page 122) topics including nutrition, exercise, wellbeing, tobacco, alcohol and other drugs	**Ask or check file notes** • Estimated date of birth (page 108) (EDB) • Detailed history — see *Antenatal care* (page 107) **Check** • Height • BMI — use pre-pregnancy weight • U/A — midstream urine, send for MC&S even if U/A normal • Head-to-toe exam, including vulva • Risk factors for preeclampsia — see *Hypertension in pregnancy* (page 158) **Take blood for** • FBC, iron studies, POC Test for Hb • Blood group, antibody screen • Rubella serology • Hepatitis B serology, Hepatitis C serology • HIV serology • Pregnancy STI check (page 250) including syphilis serology • Diabetes (page 140) tests — HbA1c and OGTT • If known diabetes, high BP or kidney disease — UEC, LFT, TFT, B12, ACR • If known thyroid problems — TFT, T3, T4 • Cervical screening, if due (up to 20 weeks gestation). If speculum exam not done BUT eligible for HPV test offer lower vaginal swab (LVS) • If history of preterm birth — LVS for MC&S for bacterial vaginosis **Do** • Offer immunisations as recommended during pregnancy, at appropriate gestation

Table 2.2

Things to offer at specific times	Antenatal education
11-13 weeks+6 days • If woman unsure of last period — dating scan • First trimester screen (page 118) for anomalies • Edinburgh Postnatal Depression Scale (EPDS) at least twice in pregnancy — before 28 weeks and after 36 weeks **14-20 weeks** • If first trimester screen not done — offer second trimester screen (page 120) **18-22 weeks** • Morphology ultrasound (page 120) + cervical length measure, if risk of preterm birth • Antenatal review at regional service • After 20 weeks — pertussis immunisation for woman, partner and other adults in household **24-28 weeks** • If no known diabetes — 75g fasting OGTT. See *Screening for diabetes in pregnancy* (page 141) • If Hepatitis B surface antigen (HBsAg) test positive — check viral load (HBV DNA) **28 weeks** • FBC, iron studies, POC Test for Hb • If RhD negative with no Anti-D antibodies — repeat antibody screen *THEN* give prophylactic RhD-Ig IM – 625 international units • If other antibodies detected earlier — repeat antibody screen • Pregnancy STI check (page 251) including syphilis serology • Encourage woman to sleep on her side until baby born **34 weeks** • If RhD negative with no Anti-D antibodies — give second prophylactic RhD-Ig IM – 625 international units • Discuss transfer to regional centre for birth **36 weeks** • FBC, iron studies, POC test for Hb • Pregnancy STI check (page 250) including syphilis serology • Combined vaginal and anal swab (page 254) for GBS (page 152) • Check pregnancy record complete. Discuss plans for birth • Edinburgh Postnatal Depression Scale (EPDS) **38 weeks** • Transfer to regional centre to wait for birth	• Try to talk about each of these topics during pregnancy — see *Antenatal parent education* (page 122) • Nutrition and supplements • Exercise • Sleep • Smoking, alcohol and other drugs • Prescribed and over the counter medicines • Immunisations • Common discomforts of pregnancy • Mental health and wellbeing • Domestic/family violence, safety • Birth plan, travel to regional centre for birth • Signs of labour, process of birth • After birth — breastfeeding, family supports, looking after baby • Contraception

Antenatal care

- First antenatal visit is recommended during the first 10 weeks of pregnancy but can be at anytime
- Must have shared care — doctor, midwife, obstetrician to check risks and develop shared care plan, including review schedule

Red Flags — Urgent Medical Consult

- Systolic BP 140mmHg or more
- Diastolic BP 90mmHg or more
- Shortness of breath
- Any change in pattern of foetal movements (reduced or absent)

High risk pregnancy

- Conditions that suggest woman may need extra antenatal care
  - Underweight — BMI less than 18.5
  - Obese — BMI more than 30
  - High BP
  - Diabetes, gestational diabetes
  - Heart or kidney disease
  - History or known rheumatic fever
  - High EPDS —score of 10 or more or significant risk factors on Kimberly Mum's Mood Scale
  - Use of alcohol and/or other drugs
  - Known family and/or domestic violence
  - Known to child protection services
  - Recurrent miscarriages
  - Uterine surgery, cone biopsy, fibroids removed

Schedule of antenatal visits

- Planned schedule of visits should consider individual woman's needs
- High risk pregnancy — may need more visits
- Minimum of 7–10 visits recommended
  - Monthly until 28 weeks
  - Fortnightly until confinement (sit down)
  - Weekly after 38 weeks if not in regional centre

Key visits

First 10 weeks of pregnancy	First visit history and checks
11–13 weeks	First trimester screening and dating ultrasound
18–20 weeks	Time with morphology ultrasound if possible
24–28 weeks	Time with pathology
34 weeks	Discuss travel to regional centre for birth, some women will need prophylactic RhD-Ig
36 weeks	Time with pathology and organise travel to regional centre for birth

First antenatal visit

- First visit will be long. Spend time getting to know woman, explaining what needs to be done
- Take detailed history — best way to find women who need extra care during pregnancy, labour and after birth
- **Medical/midwife/obstetrician consult** about risks and to develop shared care plan including review schedule
- Do routine antenatal check (page 105) *AND* the following

Ask

Estimated date of birth (EDB)

- Use date of last normal menstrual period (LNMP) and obstetric wheel
  - If unsure of calendar date for menstrual period ask was it at the same time as recent community or other event

Obstetric history

- Previous pregnancies including stillbirths, miscarriages, ectopic pregnancies, terminations
- Problems in previous pregnancies — high BP, diabetes, anaemia, infections, Group B Streptococcus (GBS), bleeding, blood clots (DVT, thromboembolism), premature rupture of membranes
- Previous births — date, place, gestation, episiotomy or tears, retained placenta, heavy bleeding
- Birth type — spontaneous vaginal birth, induction, forceps, vacuum, caesarean section
- Baby — weight, APGAR scores, birth anomalies, problems in first 6 weeks, GBS infection, breastfeeding
- After birth — infection, breast problems, blood clots (DVT, PE), depression

Medical and surgical history

- Allergies, medicines, immunisation history
- High BP, diabetes, heart disease, kidney disease, recurrent UTIs, fits, lung disease, asthma, blood clots, bleeding problems
- Mental health problems including previous perinatal depression
- Operations, problems with anaesthetics, blood transfusions

Gynaecological history

- Usual periods — how often, how long
- Recent contraception
- Any trouble getting pregnant, assisted reproduction
- Date of last cervical screening, results, any treatment for previous abnormality
- STIs, Pelvic Inflammatory Disease (PID), operations

Family history

- Medical problems in close relatives, especially diabetes, hypertension or mental health problems
- Multiple pregnancy, preterm labour or birth
- Genetic/family history problems

Social history

- Regular partner, family support, housing, money — current Centrelink support
- Domestic/family violence (page 22)
- Substance use — prescribed medicines, smoking, passive smoking, chewing tobacco, alcohol, illicit drugs, herbal/natural substances
- Care of previous children, if known to child protection services

Check

- Weight, height, BMI — use pre-pregnancy weight to calculate BMI
- BP — take when seated and rested. Use manual sphygmomanometer, correct size cuff, same arm each time
- Head-to-toe exam — with attention to
  - Mouth — gum disease, tooth decay
  - Thyroid — feel for obvious enlargement
  - Heart — heart rate, listen for heart murmur
  - Chest — respiratory rate, listen for wheeze, crackles
  - Breasts and nipples — abnormalities, concerns
  - Abdomen — scars, masses, tenderness, size of uterus
  - Legs — calf tenderness, varicose veins
  - Skin — sores or infections

Do

- Edinburgh Postnatal Depression Scale (EPDS) or Kimberly Mother's Mood Scale — see Perinatal depression and anxiety (page 127)

Pathology

- See Antenatal checklist (page 105)
  - If medical problems — may need other blood tests — see individual protocols
  - Record on pathology forms — woman pregnant, how many weeks, any medicines, current medical conditions
  - Request copy of results sent to antenatal clinic at hospital where birth planned
- **Medical/midwife consult** about immediate management and to plan shared antenatal care. Talk about findings from history and examination including
  - Prescribed or other medicines that may need to be stopped or changed
  - Medical problems needing treatment — abnormal U/A, STI, dental disease — refer to specialist for any pre-existing medical conditions

Supplements

- Give **iodine** oral — 150microgram, once a day throughout pregnancy. Can be in multivitamin designed for pregnancy and breastfeeding
  - If woman has thyroid condition — **medical consult**
- Give **folic acid** oral — 0.4mg, once a day *OR* 5mg once a day if woman has diabetes, epilepsy, BMI over 30 or previous baby with neural tube defect. Can be in multivitamin designed for pregnancy and breastfeeding — until 12 weeks pregnant
- Give iron if needed — see Anaemia (weak blood) in pregnancy (page 135)

Discuss

- Stage of baby's development and healthy pregnancy — diet, exercise, avoiding smoking, alcohol and other drugs
  - If smoking — talk about stopping smoking and consider offering nicotine replacement therapy (NRT) (STM, page 294)
- Antenatal screening tests for abnormalities for the baby — see Antenatal genetic and ultrasound tests for baby (page 118)
- Common discomforts (page 132) — morning sickness, heartburn

Follow-up

- If LNMP unknown or unsure — refer for ultrasound — best done before 14 weeks
  - Consider combining dating scan with first trimester nuchal translucency measurement
- Check results — see Table 2.3
- Refer to doctor and midwife and other multidisciplinary teams as indicated
- Refer to services or identify community support for social issues, if needed

Management of results

Red Flags — Urgent Medical Consult

- Syphilis positive
- HIV positive

Table 2.3 Management of results at first and subsequent visits

Investigation	Result	Management
FBC or POC Test — Hb	Hb — less than 110g/L	See — Anaemia in pregnancy (page 135)
FBC	MCV — 80fL or less	See — Anaemia in pregnancy (page 135)
FBC	Low platelets	**Medical consult**
OGTT, BGL, HbA1c	See — Screening for diabetes in pregnancy (page 141)	
Blood group and antibody screen	RhD negative, no Anti-D antibodies	• Repeat antibody screen at 28 weeks • If RhD-Ig already given for sensitising event — note on form • Give routine RhD-Ig IM prophylaxis at 28 and 34 weeks — 625 international units
Blood group and antibody screen	RhD negative, with Anti-D antibodies	**Refer** to obstetrician
Blood group and antibody screen	Other antibodies present	**Medical consult**
Rubella serology	Positive and protective	Normal
Rubella serology	Non-immune or unclear	• Record need for immunisation after birth in file notes • Offer MMR immunisation after birth
Hepatitis B serology	Hepatitis B surface antigen test (HBsAg) positive	• See — Hepatitis B in pregnancy (page 154) • Record in antenatal file notes ▸ Baby needs **hepatitis B immunoglobulin** at birth ▸ If mother needs immunisation
Hepatitis C serology	Positive *OR* negative but risk factors identified	See — Hepatitis C in pregnancy (page 156)

Investigation	Result	Management
Syphilis serology	Positive	**Urgent medical/sexual health consult**
HIV serology	Positive	**Urgent medical/sexual health consult**
NAAT	Positive STI result	See — STI management for women (page 255)
Vaginal swab MC&S	Positive STI result	See — STI management for women (page 255)
Vaginal swab MC&S	Positive non-STI result	See — Bacterial vaginosis (page 267) See — Thrush (candidiasis) (page 266)
Combined vaginal and anal swab	GBS positive	See — Group B Streptococcus infection (page 152)
U/A	Leucocytes, blood, protein, or nitrites	See — Urine problems in pregnancy (page 168)
U/A	Glucose	**Medical consult**
Urine MC&S	Culture positive	See — Urine problems in pregnancy (page 168)
Urine MC&S	GBS positive	See — Group B Streptococcus infection (page 152)
Cervical screening	Any abnormalities	See — Follow-up of cervical screening (page 294)
Obstetric ultrasound	Any abnormalities • Amount of fluid • Location of placenta • Morphology of baby • Cervical length less than 35mm	**Medical consult**

Supporting resources

- Due date online calculator
- Talking about tears video for clinicians

Antenatal care in twin pregnancy

- Physical demands of multiple pregnancy can be very tiring for the woman. Common discomforts of pregnancy (page 132) may be increased
- Multiple pregnancies need close monitoring — refer to obstetrician as soon as multiple pregnancy identified and do **obstetrician/doctor/midwife consult** at every appointment. Consider telehealth
- Birth of twins often complicated — **always** plan for hospital birth at major hospital with maternal and newborn services

Table 2.4 Increased risks of complications for mother and baby

Mother	Baby
• High BP, preeclampsia • Preterm birth • Anaemia • Gestational diabetes	• Poor growth • Born preterm • Congenital anomalies

Talk with woman about

- Advise the woman to look for signs of
  - Preterm labour (page 53)
  - Premature rupture of membranes (page 50)
- Antenatal parent education (page 122)
- Any available support services for twin pregnancies

Antenatal care schedule

Explain schedule to woman so she can understand and be involved

- Extra visits will be needed as advised by obstetrician
- See Antenatal care (page 107) for what to do at visits

Obstetrician will help plan antenatal care and obstetric ultrasounds

- Early first trimester ultrasound to confirm gestation, number of babies and placentas
- Ultrasound at 16–18 weeks *THEN*
  - Every 4–5 weeks if 2 placentas (dichorionic diamniotic — DiDi twins)
  - *OR* every 2 weeks if 1 placenta (monochorionic diamniotic) — MoDi *OR* (monochorionic monoamniotic) — MoMo twins — high risk of twin-to-twin transfusion syndrome with 1 shared placenta
- Make plans for woman to birth in hospital — talk with woman about options for birthing. Woman will need to go to a major birth centre earlier than for a singleton pregnancy

Supporting resources

- Australian Multiple Birth Association website

Weight gain in pregnancy

- Healthy weight before, during and after pregnancy helps both mother and baby to reduce their risk of chronic diseases later in life
- Women who are under or over weight are more likely to need extra care and support during pregnancy and birth
- Many complex social and environmental factors impact on weight (eg food availability, housing conditions, social support, mental health)
- Need the support of a multi-disciplinary team

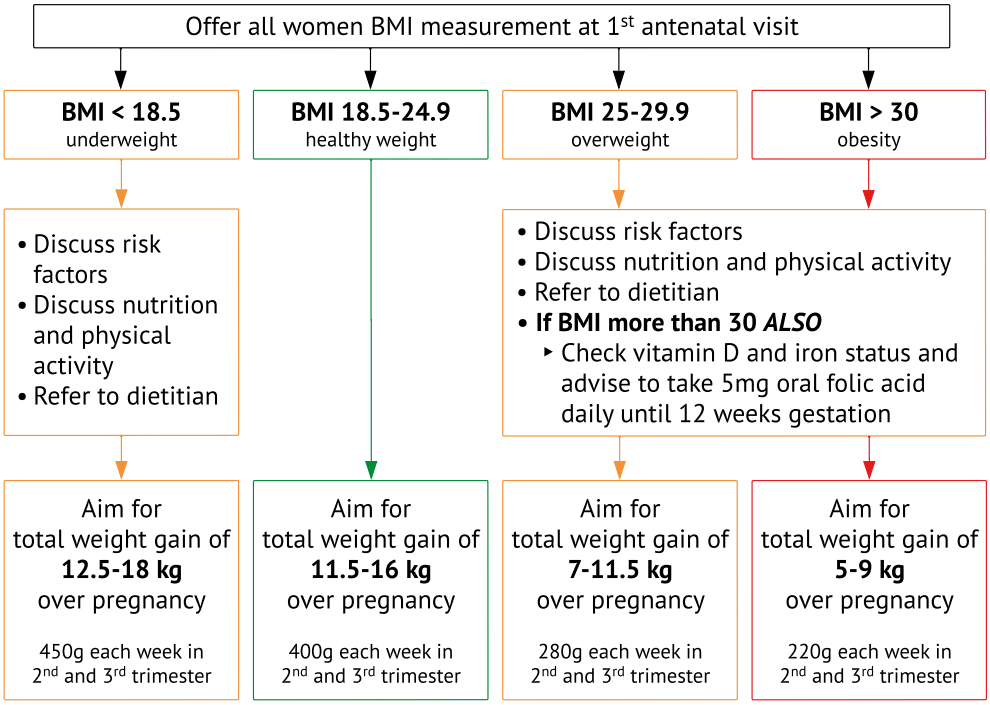
Before pregnancy

- Talk to women of childbearing age about healthy weight, physical activity and diet
- For women who are overweight
  - Check blood pressure and screen for diabetes — see Diabetes (STM, page 246)
  - Refer to Dietitian
  - Give **folate** oral — 500 micrograms once a day (5mg if obese or has diabetes), starting 1–3 months before pregnancy or as soon as possible if pregnant, continue until 12 weeks pregnant

During pregnancy

- Check woman's weight at first antenatal visit and offer weight check at all visits throughout pregnancy
- Talk about risks of being underweight or overweight when pregnant
  - Underweight during pregnancy risks – preterm birth, small for gestational age baby, low birth weight
  - Overweight and obesity during pregnancy and excessive weight gain risks –diabetes, preeclampsia, macrosomia (large for gestational age baby), congenital anomalies, preterm birth, need for caesarian delivery, still birth, neonatal intensive care, breastfeeding problems, obesity risk for child in later life
- Follow Flowchart 2.1 to arrange weight management strategies and support
  - Work with woman to develop a shared approach to management and avoid contributing to weight stigma (shame)
  - Set individual gestational (pregnancy) weight gain targets
- If BMI less than 18.5 or more than 35 ultrasound monitoring of foetal growth recommended in third trimester— **obstetrician consult**

Flowchart 2.1 Monitoring weight in pregnancy



Planning birth for women with obesity

- Refer women with BMI more than 35 to regional hospital early, with a dating scan
- Timing and type of birth will be decided with woman and multidisciplinary team — induction of birth may be considered earlier if high risk birth

Table 2.5 Birthing considerations by BMI

	BMI less than 34.9	BMI 35-39.9	BMI more than 40
Location	Can usually birth at regional centre unless has comorbidities	May need to be transferred to major hospital as advised by obstetric team	Recommended to birth at a major hospital
Anaesthetic review	Not routine	Anaesthetic consult needed in third trimester	Anaesthetic consult needed in third trimester

After the birth

- See — Postpartum follow-up of medical conditions (page 216)

Unborn baby's growth

Do checks that you are skilled to do — **midwife/doctor consult** for other checks

Positioning pregnant woman

- In later pregnancy the uterus is heavy. When a woman in the third trimester of pregnancy lies on her back the weight of the uterus presses down on big abdominal blood vessels, she may feel faint
- Put a wedge/pillow under the right hip to tilt woman slightly to left
- If woman feels faint — roll onto left side **straight away**, check blood pressure and heart rate

Measuring fundal height

- Tells if the baby is growing properly and approximately how many weeks pregnant
- Measure from fundus (top of uterus) to top edge of pubic bone
- Measure in centimetres at every antenatal visit once uterus can be felt — usually after 12–14 weeks pregnant
  - **Measure the same way at each visit** so measurements are consistent

Do

- Ask woman to empty bladder — Collect urine sample if needed
- Position pregnant woman as above
- **If you notice a contraction — stop until it is over**
- Find top of uterus by gently pressing side of your hand where you think it is — Figure 2.1 — move hand up and down until it is against top of uterus (feels like a smooth rounded muscle)
- Measure with disposable paper tape
  - Have tape facing downward so previous readings or expected length of pregnancy doesn't influence result
  - Put zero end of tape measure at top of uterus and hold with 1 hand
  - With other hand, stretch tape from top of uterus down midline to top of pubic bone — Figure 2.2. Stretch tape over any fold of skin/fat
  - Often easier to ask woman to find pubic bone herself

Figure 2.1

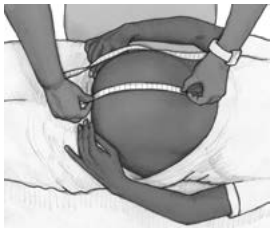


Figure 2.2

- Compare your measurement with expected measurement for woman's dates — Figure 2.3 and/or ultrasound
  - 12 weeks — top of uterus just above pubic bone
  - 20–36 weeks — measurement in centimetres about the same as number of weeks pregnant. At around 20 weeks the fundal height will be around the level of the umbilicus
  - 36–38 weeks — top of uterus at/under sternum
  - 40 weeks (term) — fundal height less than 38 weeks measurement as presenting part (eg head) drops down into pelvis. May not happen with first baby
  - Twins — fundal height will be several weeks ahead of pregnancy dates

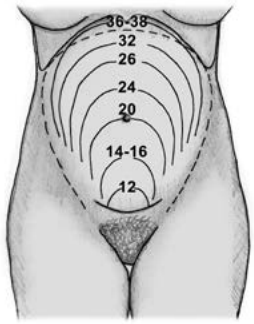


Figure 2.3

Medical consult if

- Fundal height 3cm or more than expected — baby may be larger than gestational age or may be more than one baby
- Fundal height 3cm or less than expected — baby may be small for gestational age
- Will need obstetric ultrasound as soon as possible and review at antenatal clinic

Palpation of the pregnant uterus

- Should only be done if you are trained in this procedure or with **midwife/ medical consult**
- Helps identify presenting part (part of baby furthest down in pelvis)

Antenatal genetic and ultrasound tests for baby

- There is a small chance in every pregnancy that baby may have an anomaly. Some women won't want to know, other women are very anxious about possible problems
- Screening for and diagnosis of anomalies gives women the option to prepare for a baby with this type of condition or terminate pregnancy
- Anomalies detected by routine screening before the baby is born include
  - Chromosomal — Trisomy 21 (Down syndrome), Trisomy 18
  - Structural and functional anomalies
- If results indicate any concerns — **medical consult** and consider referral to obstetrician

Increased likelihood of foetal anomaly if

- Inherited conditions in woman's or partner's family
- Mother has medical problems — diabetes, epilepsy, prescribed medicines, substance misuse
- Previous baby with an anomaly
- Increasing age of mother increases chance of some anomalies (eg Down syndrome)

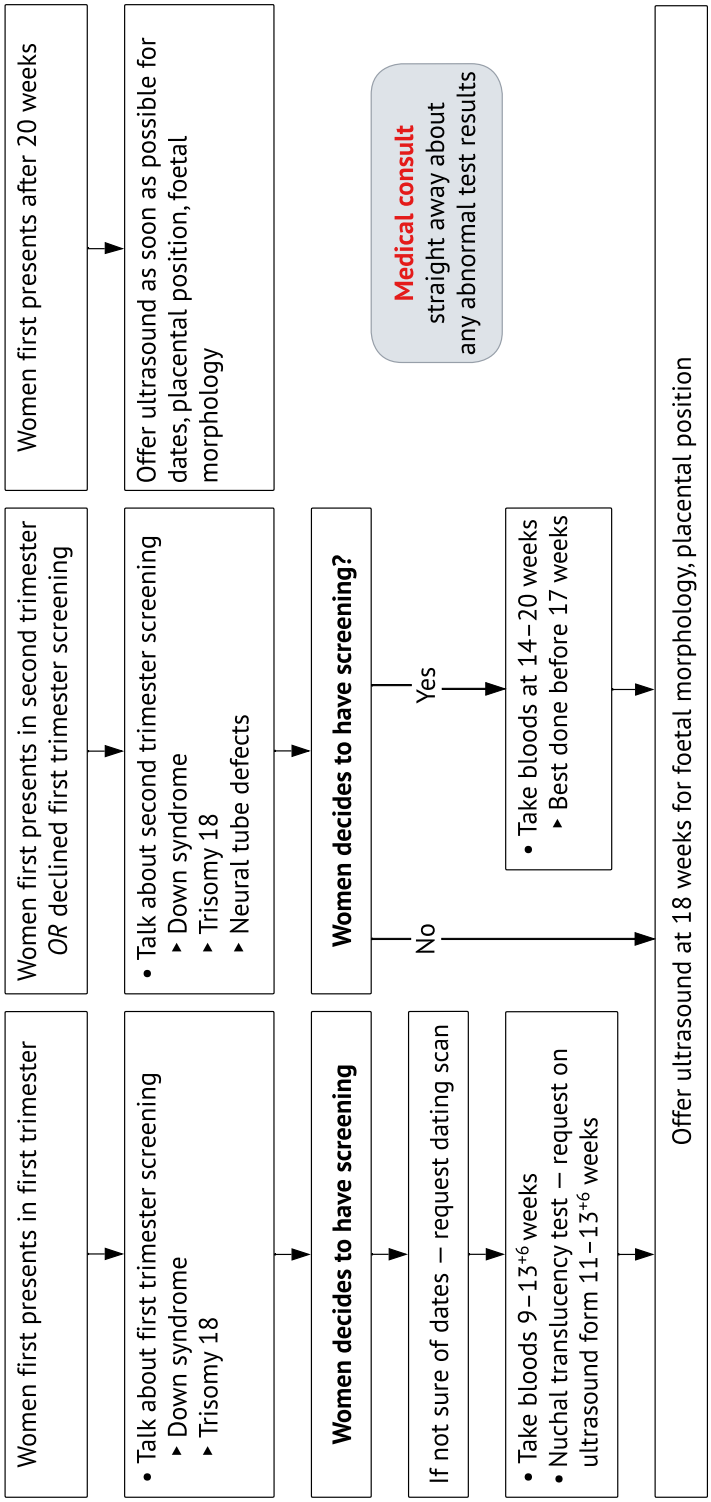
Screening tests

- Estimate chance that baby may have an anomaly
- Are gestation specific (done at specific times during pregnancy) so accurate dating of pregnancy by ultrasound is needed

Do

- Offer antenatal screening — see Flowchart 2.2
- Talk about testing for chromosomal anomalies at first antenatal visit — use Menzies 'Checking for problems with the baby' resource
- If increased likelihood of foetal anomaly
  - **Midwife/obstetrician consult** to talk about screening and options
  - If specific concerns due to age, personal or family history — **medical consult**
- If a screening test is returned with an anomaly more tests will be needed for diagnosis

Flowchart 2.2 Antenatal screening



First trimester — between 9 and 13^{+6} weeks of pregnancy

Maternal serum screen and nuchal translucency measurement

- Screens for
  - Down syndrome — detects 80–90% of affected babies
  - Trisomy 18
- Take blood from woman between 9 and 13^{+6} weeks of pregnancy
- Ultrasound between 11 and 13^{+6} weeks of pregnancy to measure back of baby's neck

Second trimester screen — between 14 and 20 weeks of pregnancy

Maternal serum screen

- Screens for
  - Down syndrome — detects 70–80% of affected babies
  - Trisomy 18
  - Neural tube defect — anencephaly, spina bifida
- Take blood from woman after 14 weeks and up to 20 weeks pregnant
  - Best done around 16 weeks to allow time for diagnostic testing if needed

Tests for foetal growth and anatomical anomalies

First trimester/dating scan

- Most accurate for dating between 8 and 13^{+6} weeks pregnant
- Reliably diagnoses multiple pregnancy
- Confirms pregnancy is intrauterine and helps exclude ectopic pregnancy
- Confirms pregnancy is viable — foetal heart activity can be seen on transvaginal ultrasound at 6–7 weeks in normal pregnancy
- Detects some severe structural anomalies, eg anencephaly (parts of brain and skull not formed)
- Can diagnose miscarriage

Obstetric morphology ultrasound

- Usually done at 18–20 weeks pregnant
- Provides information about location of placenta, amount of amniotic fluid, growth of baby
- Reliably detects some major anatomical anomalies (eg open neural tube defects), but less sensitivity for others (eg heart anomalies)
- Detects other anomalies that may not have functional significance but can be associated with chromosomal problems
- If any anomaly — **medical consult**. Obstetric consult usually needed

Late second trimester and third trimester ultrasound

- If morphology scan not done at 18-20 weeks pregnant — still worth doing ultrasound later
  - Not as accurate for dating and detecting anatomical anomalies
- If woman had morphology ultrasound — further ultrasounds only needed if clinically indicated

Diagnostic tests for chromosomal anomalies

Include chorionic villus sampling and amniocentesis — must be done by a specialist

- Full results from diagnostic testing can take 2-3 weeks
- Preliminary result may be available in 48-72 hours but must talk with obstetrician about results
- Small increase in risk of miscarriage
- If result abnormal — woman may choose termination of pregnancy
- **Amniocentesis** — needle passed through wall of uterus into amniotic fluid. Cells from aspirated fluid tested
  - Done after 15 weeks pregnant
  - Can be done at smaller centres
- **Chorionic villus sampling** (CVS) — needle passed through wall of uterus into placenta to collect cell sample
  - Done after 11 weeks pregnant
  - Only done in larger hospitals, eg Adelaide

Supporting resources

- Screening for foetal abnormalities and diagnosis poster
- Checking for problems with baby in early pregnancy booklet

Antenatal parent education

To promote a healthy pregnancy, prepare woman for pregnancy, birth and parenting and to build woman's confidence in her ability to give birth and care for her baby

Red Flags — Tell woman to come to clinic if she has any of these signs

- Vaginal bleeding, other fluid loss
- Contractions/baby pains
- Headaches, blurred vision, spots in front of eyes
- Excessive swelling of feet/hands
- Urine problems — burning, frequent urge to urinate
- Fever, chills, feeling hot then cold
- Abdominal pain or ongoing lower back pain
- Chest pain
- Any change in baby movements, especially reduced movement

Do

- Document antenatal education in antenatal file notes and hand-held record
  - Encourage woman to keep her hand held record, if available
- First antenatal visit — **talk with woman about**
  - Pregnancy care options, who will provide care, support person
  - Lifestyle considerations — access to healthy food, exercise, substance use
  - Screening tests (page 118) in pregnancy
- At all antenatal visits
  - Talk about information topics and key messages — see below
  - Refer for social and emotional support where needed

Education

Visit Pregnancy, birth and baby and Safer baby bundle websites for resources and information

Nutrition

- A healthy diet is important before, during and after pregnancy
  - Eat vegetables, fruit, meats, bush tucker, breads/cereals at 3 meals every day. Include healthy snacks (eg fruit, bread, milk, yoghurt) if hungry

- Eat foods high in iron (eg meat, kangaroo, fish, chicken, eggs) — eat fruit and vegetables at main meals to increase absorption of iron from food
- Drink lots of water everyday — aim for at least 2 litres. Avoid tea — it reduces iron absorption from food

- Encourage taking iodine and folic acid supplements — see *Antenatal care* (page 110)
  - If has anaemia — take iron tablets — see Anaemia in pregnancy (page 135)
- Ask about access to healthy foods and kitchen facilities — refer to community programs that provide food and to council or housing services to fix issues
- Food poisoning can increase risk of miscarriage
  - Wash hands and clean kitchen before preparing food
  - Cook or reheat foods until they are very hot
  - Tell woman to attend clinic if she has flu-like or gastrointestinal illness

Exercise

- Encourage 30 minutes of moderate physical activity every day — walking, swimming, non-contact sports
  - Avoid strenuous activity, especially if not used to it
  - Exercise in cool part of day — avoid becoming overtired or hot

Medicines: prescribed and over the counter

- Tell woman to talk to nurse/doctor/ATSIHP before taking any medicines (prescribed, over the counter, illegal) during pregnancy
  - Make sure anyone prescribing medicines knows woman is pregnant or breastfeeding
  - Some medicines and drugs can harm the placenta or baby if taken in pregnancy or while breastfeeding — **medical/pharmacist consult** if not sure if medicine safe in pregnancy or breastfeeding

Alcohol, smoking and other drugs

- There is no safe level of alcohol, smoking or other drugs in pregnancy or when breastfeeding
- Cigarettes and alcohol can increase the risk of pregnancy complications (eg preeclampsia and placental abruption), birth defects, miscarriage, stillbirth, low birth weight, sudden infant death syndrome (SIDS) and risk of baby having chronic diseases when an adult

- Best to stop before becoming pregnant or early in pregnancy but stopping anytime is good
  - Binge and heavy drinking can put baby at most risk of developmental problems
  - No evidence that 'cutting down' number or strength of cigarettes protects baby — **do not** recommend as only strategy
  - For medicines to help stop smoking — see *Tobacco — Pregnant or breastfeeding women* (STM, page 294)

Chewing tobacco (mingkulpa, pituri)

- Commercial or native tobacco mixed with wood ash, rolled into ball
- Chewed or absorbed through skin, behind ear or on lip
- Increases baby's heart rate
- Safety in pregnancy not known but risks are thought to be similar to smoking

Mental health and wellbeing

- Significant emotional changes can occur during and after pregnancy
- Look for warning signs — spiritual, emotional and physical symptoms of depression during pregnancy and after baby is born — come to clinic if unwell or unhappy
- Edinburgh Postnatal Depression Scale (EPDS) at least twice in pregnancy — before 28 weeks and after 36 weeks
- Screen regularly for early assessment of mental health — eg Kimberley Mum's Mood Scale
- For further assessment — see *Perinatal depression and anxiety* (page 127)
- Talk about support services available

Domestic/family violence

- May increase or be triggered by pregnancy
- Be aware of signs of domestic/family violence and assess risk — see *Family and Domestic Violence* (page 22)
- Explain that asking about it is routine part of antenatal care
- Be aware of mandatory reporting requirements in your state/territory
- Refer to and arrange support services — make sure has a safety plan at all times

Sex in pregnancy

- Having sex during pregnancy is usually safe for woman and baby — **medical/midwife consult** if any concerns

Working during pregnancy

- For most women in most jobs it is safe to continue working during pregnancy
- Talk about
  - Pregnancy employee entitlements — see Fairwork website
  - Personal concerns about her job (eg working with chemicals)

Birth planning

- Women living in remote and rural areas without birthing services will be referred to a regional hospital and transferred at 38 weeks or earlier if medical or obstetric complications
- Will attend hospital midwife assessment when arrives at regional centre then weekly appointments with doctor/midwife until she comes into labour
- Usually stays in postnatal ward for about 1–5 days (if no complications) then goes to hostel until transport back to community
- Give information during antenatal period to prepare woman for this including
  - Accommodation in regional centre — hostel accommodation may be available. Provides bedding, public phone, washing machine, might provide meals and transport to and from hospital appointments
  - Organise appropriate escort, preferably female, who can support her. Find out if patient travel scheme will cover support person costs
  - What to bring for herself and her baby — clothes, pads, baby clothes, nappies
  - What to organise at home — childcare for older children, money/ finances
  - Reminding woman to attend Centrelink and have 100 points of identification ready

Labour and birthing

- Provide mother with a copy of and refer to the “Healthy pregnancy, healthy baby” booklet when talking about labour, birth and immediate postnatal period (after the birth)
- Tell woman most babies are born naturally. Some may need help with vacuum, forceps, caesarian etc — differences in labour will be talked about by midwife
- Talk about signs labour is starting including
  - ‘Show’ — small amount of blood and mucus
  - Irregular uterine pains (contractions) ‘coming and going’
  - Low back pain

- Talk about when to go to hospital labour ward
  - Any bleeding or change in foetal movements
  - Painful regular contractions
  - Persistent lower back pain
  - Rupture of membranes
- Explain that pain relief in labour will be talked about by a midwife
- Explain that woman might have procedures during birth such as vaginal exam with or without artificial rupture of membranes

After the birth

- See — *Postnatal care of mother* (page 211) and *Postnatal care of baby* (page 223)
- Talk about and encourage breastfeeding (page 232) — benefits for baby and mother, supports available
- Talk about looking after baby — if baby is well they usually stay with mother in hospital room and midwife will talk about how to care for baby
- Talk about personal care
  - Importance of postnatal check for herself and baby
  - Choices for contraception (page 331), especially during breastfeeding

Supporting resources

- Pregnancy, birth and baby website
- Safer baby in pregnancy bundle
- Kimberley Mum's Mood Scale
- Healthy pregnancy, healthy baby booklet

Perinatal depression and anxiety

Early recognition and management of perinatal depression is essential

- Talk and ask about depression, anxiety, other mental health issues at all routine antenatal and postnatal checks for woman and baby
- If history of severe mental illness (eg depression, bipolar disorder, psychosis) will need mental health team involved in care, especially if taking medicines — even if no current symptoms
- Consider screening and further mental health assessment if
  - Sad, more down than usual, feeling hopeless and helpless
  - Unmotivated, does not want to see people
  - Not enjoying things they normally enjoy, low energy
  - Not interacting with baby, not caring for herself or baby as well as expected
  - More irritable and angry than normal, behaviour changed
  - Disturbed sleep not related to pregnancy or baby waking
  - Decreased appetite or more hungry. Weight loss or gain

Red Flags — Urgent Medical Consult

- If you think there may be a risk of harm to mother or child

Ask

May be hard to talk to a stranger. Make woman comfortable and give her lots of time to talk freely. Reassure and validate her feelings — may take several visits to build up trust before she talks

Explain that you ask all new mothers these questions to see if they need extra help

- Does she feel down, depressed or hopeless
- Any loss of interest or pleasure in doing things
  - If yes to both — do they want help
- Tell new mother it is not uncommon to have unwanted thoughts of harming self or baby — ask if they have had any thoughts like that
  - If yes — ask how often and if they have done any type of harm
- Ask about risk factors – Table 2.6

Table 2.6 Medical consult if risk factors identified

Childhood	• Did they feel safe and cared for • Who grew them up. Were they loving and supportive ▸ If not biological mother or caring it may affect their ability to attach to baby
Abuse	• Any past or current abuse – physical, sexual or psychological
Mental health	• Any past or present mental health problems (eg 2 weeks of feeling really down or stressed, anxiety, bipolar, psychosis) • Any family members with mental health problems
Anxiety (in last 2 weeks)	• Any anxious, nervous feelings or on edge • *OR* not able to stop or control worry
Substance use	• Current drug or alcohol use — mother and/or partner
Living arrangements	• Do they feel safe and cared for at home • Who can help them if they are not coping ▸ Consider if woman is in her own or another community/clan, "right skin" relationship, if partners family supportive
Life stressors	• Anything happened in last 12 months that has been particularly stressful — relationship problems, domestic/family violence, death in family, gambling or money issues, housing problems (eg overcrowding), pregnancy loss ▸ If yes — how did they cope
Attitude	• Did they ever try to believe they were not pregnant • Were there any problems before birth — for them or baby • How do they feel about the baby and being a mother

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- Hb
- U/A, pregnancy test if postnatal
- Head-to-toe exam
- Current medicines

Edinburgh Postnatal Depression Scale (EPDS) (page 130)

- Do at least twice during pregnancy and once in early postnatal period but can do as often as needed.
  - ▸ As a minimum first antenatal visit *THEN* third trimester of pregnancy *AND* 6-12 week postnatal *THEN* once in first postnatal year
- If EPDS score between 10 and 12 — monitor and repeat in 2-4 weeks as score may increase
- Repeat EPDS at any time in pregnancy and in the first postnatal year if clinically indicated

- If woman has low English literacy
  - May need help to answer questions
  - Consider using interpreter — not family or someone who knows woman or she may not answer openly

If postnatal

- Check interactions with baby, appropriate response to baby's needs
- Safety and wellbeing of baby
  - Does mother have any thoughts of harming baby
  - Poor level of care or growth faltering can indicate postnatal depression

Do

Most important thing to decide — is there immediate or short-term risk to safety of mother or baby. Know the mandatory reporting requirements for your jurisdiction

- EPDS is not diagnostic. If mental health issues indicated — further mental health assessment needed
- If immediate risk to mother or baby — **medical/mental health consult** to develop short-term safety plan
- Talk to woman about perinatal depression/anxiety or other disorders if needed — ask if she wants further help or treatment
- Explore any fears she may have about disclosing further or accepting help or treatment, reassure her that you can provide her with support
- Make management plan
- Medicines may be needed for women with severe symptoms or risk — **medical/mental health consult**
  - Potential for harm to foetus or breastfed baby must be balanced with harm to woman or child if she remains untreated
  - If no safe options for effective local treatment — consider transfer to regional centre or hospital

Follow-up

- In follow-up visits always give new mothers opportunities to talk about their feelings about themselves and their babies
- If you have any concerns — **medical consult**

Table 2.7 Edinburgh Postnatal Depression Scale (EPDS)

Date: _____ Weeks pregnant:_____ Weeks post birth: _____
Surname: _____Given Name:_____
As you have recently had a baby or are pregnant, we would like to know how you are feeling. Please circle the number next to the answer which comes closest to how you have felt in the last 7 days, not just how you feel today.

I have felt happy:

- ◯ Yes, all of the time
- ◯ Yes, most of the time
- ◯ No, not very often
- ◯ No, not at all

This would mean: *I have felt happy most of the time during the past week*.
Please complete the other questions in the same way.

In the past 7 days	
1. I have been able to laugh and see the funny side of things: ◯ As much as I always could ◯ Not quite as much now ◯ Definitely not so much now ◯ Not at all	6. Things have been getting on top of me: ◯ Yes, most of the time I haven't been able to cope at all ◯ Yes, sometimes I haven't been coping as well as usual ◯ No, most of the time I have coped quite well ◯ No, I have been coping as well as ever
2. I have looked forward with enjoyment to things: ◯ As much as I always did ◯ Rather less than I used to ◯ Definitely less than I used to ◯ Hardly at all	7. I have been so unhappy that I have had difficulty sleeping: ◯ Yes, most of the time ◯ Yes, sometimes ◯ Not very often ◯ No, not at all
3. I have blamed myself unnecessarily when things went wrong: ◯ Yes, most of the time ◯ Yes, some of the time ◯ Not very often ◯ No, never	8. I have felt sad or miserable: ◯ Yes, most of the time ◯ Yes, quite often ◯ Not very often ◯ No, not at all
4. I have been anxious or worried for no good reason: ◯ No, not at all ◯ Hardly ever ◯ Yes, sometimes ◯ Yes, very often	9. I have been so unhappy that I have been crying: ◯ Yes, most of the time ◯ Yes, quite often ◯ Only occasionally ◯ No, never
5. I have felt scared or panicky for no good reason: ◯ Yes, quite a lot ◯ Yes, sometimes ◯ No, not much ◯ No, not at all	10. The thought of harming myself has occurred to me: ◯ Yes, quite often ◯ Sometimes ◯ Hardly ever ◯ Never
TOTAL SCORE:	

Table 2.8 EPDS scoring guide

1. I have been able to laugh and see the funny side of things: ⓪ As much as I always could ① Not quite as much now ② Definitely not so much now ③ Not at all	6. Things have been getting on top of me: ③ Yes, most of the time I haven't been able to cope at all ② Yes, sometimes I haven't been coping as well as usual ① No, most of the time I have coped quite well ⓪ No, I have been coping as well as ever
2. I have looked forward with enjoyment to things: ⓪ As much as I always did ① Rather less than I used to ② Definitely less than I used to ③ Hardly at all	7. I have been so unhappy that I have had difficulty sleeping: ③ Yes, most of the time ② Yes, sometimes ① Not very often ⓪ No, not at all
3. I have blamed myself unnecessarily when things went wrong: ③ Yes, most of the time ② Yes, some of the time ① Not very often ⓪ No, never	8. I have felt sad or miserable: ③ Yes, most of the time ② Yes, quite often ① Not very often ⓪ No, not at all
4. I have been anxious or worried for no good reason: ⓪ No, not at all ① Hardly ever ② Yes, sometimes ③ Yes, very often	9. I have been so unhappy that I have been crying: ③ Yes, most of the time ② Yes, quite often ① Only occasionally ⓪ No, never
5. I have felt scared or panicky for no good reason: ③ Yes, quite a lot ② Yes, sometimes ① No, not much ⓪ No, not at all	10. The thought of harming myself has occurred to me: ③ Yes, quite often ② Sometimes ① Hardly ever ⓪ Never
TOTAL SCORE:	

Scoring EPDS

If positive answer to Q10- always do mental health assessment (STM, page 265) straight away. In postpartum women also assess risk to baby

Add scores for the marked items for total score. See EPDS scoring guide above.

- 0–9 — likelihood of depression low
  - No formal action needed, reassure woman — unless positive response to Question 10 or high score on single question
- 10–12 — likelihood of depression moderate
  - Supportive treatment — see *Do*, repeat EPDS in 2 weeks
- 13 or more — likelihood of depression high — **medical consult**
  - Treat — see *Do*

Supporting resources

- Kimberley Mum's Mood Scale

Common discomforts of pregnancy

- Hormone levels and physical changes may cause unpleasant symptoms
- Reassure woman that discomforts are a normal part of pregnancy and usually resolve after birth — can be worse in multiple pregnancies. Often improve with simple measures
- **Medical/midwife consult** if
  - Not sure if symptom caused by serious problem
  - Not sure about management of symptom
  - Problem not resolving despite simple lifestyle changes

Red Flags — Urgent Medical Consult

- Vomiting causing dehydration, weight loss or ketones in urine
- Nausea and vomiting with fever, headache, diarrhoea, dizziness or abdominal swelling — consider causes other than pregnancy, eg UTI
- Vomiting continues past first 15 weeks of pregnancy

Nausea and vomiting

- Nausea with/out vomiting common in first trimester
- Usually resolves by itself by 16–20 weeks of pregnancy and not usually associated with poor pregnancy outcome
- Hyperemesis gravidarum (severe vomiting) can cause dehydration, ketonuria (ketones in urine) and unbalanced electrolytes (body salts) which may need hospital admission and IV fluid therapy

Ask

- History — how long, how often, other reasons for nausea and vomiting (STM, page 418)

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- Urine — U/A, note any ketones, send for MC&S
- Head-to-toe exam — with attention to hydration — look at skin, mouth
- Baby movements — after 18 weeks

Do not

- Do not give iron tablets unless woman has anaemia or is at risk of anaemia (page 135)

Do

- Give diet advice
  - Encourage woman to talk with grandmothers about traditional foods to avoid or to help prevent nausea
  - Drink plenty of fluids (aim for 2 litres a day) — teas like lemongrass or ginger, drink water between meals
  - Eat small amounts of easily digested foods often (4–8 meals a day)
  - Avoid fatty, spicy or hot foods and foods with strong smell
  - Try to eat dry crackers or toast before getting up
  - Don't lie down after eating
- Review in 1 week to see if changes have helped. If not resolved — **medical consult**
  - May suggest — **metoclopramide** oral — 60+kg 10mg, 40–59kg 5mg 3 times a day (tds). First dose may need to be given IV/IM (same dose)

Reflux (heartburn)

- May present as a burning feeling in chest or bitter taste in mouth
- Is not associated with poor pregnancy outcomes
- Treatment is to relieve symptoms

Do

- May need to try different strategies to address
- Suggest
  - Small meals more often
  - Avoiding fatty or spicy foods or caffeinated drinks, eg coffee, cola, tea
  - Sleeping on the left side, in a semi-upright position
  - Avoiding smoking
- For persistent or severe symptoms
  - May try occasional use of antiacid
  - *OR* Try H_2 antagonist (eg nizatidine) — **medical consult**

Constipation

- Common, particularly during first trimester of pregnancy
- Haemorrhoid symptoms common in second and third trimester
- Can also be caused by iron tablets

Do

- Suggest
  - Increase fibre in diet — fresh fruits and vegetables, wholegrain breads and cereals, baked beans
  - Eat more bush foods — bush sultana, tomato, orange, seed damper, yams
  - Drink more water — at least 2 litres a day
  - Walk for at least 30 minutes every day
- Advise not to strain (push) when going to toilet
- If increased fibre and water don't relieve symptoms after 1 week — try laxative — **do not** use long term
  - Bulk forming laxatives (eg *Metamucil*) may cause fewer side effects than stimulant laxatives. Introduce slowly and drink lots of water
- Standard haemorrhoid creams can be used if needed. Also try elevating legs and ice packs to anal area
- If these things don't work — **medical consult**

Leg cramps

Lower leg cramps mainly happen at night after 28 weeks of pregnancy

Do

- Suggest
  - Sitting up and pulling toes up toward shins to stretch muscles
  - Walking around when cramps come
  - Gently massaging legs — with rubbing medicine or heat
  - Drinking plenty of water

Other common problems that may occur

Include backache, pelvic girdle pain, varicose veins, carpal tunnel syndrome

- **Medical/midwife** consult if concerned

Supporting resources

- National pregnancy care guidelines

Anaemia (weak blood) in pregnancy

Small drop in haemoglobin (Hb) level is usual in pregnancy. Hb should be
- 110g/L or more in women up to 20 weeks pregnant
- 105g/L or more after 20 weeks

Risk factors for low iron stores at start of pregnancy
- Diet low in 'absorbable iron' — significant problem in remote communities
- Grand multiparity (already given birth 3 or more times)
- Adolescent (teenage) pregnancy — iron also needed for mother's own development
- Twin or multiple pregnancy
- Chronic conditions or infections — diabetes, kidney disease, tuberculosis
- Recent history of bleeding
- Previous anaemia
- Less than a year between pregnancies

Problems for pregnant woman
- Tiredness
- Increased risk of infection during pregnancy, postpartum haemorrhage, severe anaemia after birth due to poor iron reserve
- Very severe anaemia can cause heart failure

Problems for baby
- Low iron stores cause anaemia
- Low birth weight, preterm birth, perinatal mortality
- Long-term effects on child's development

Ask
- Periods before pregnancy — long or heavy
- Iron in diet
- About risk factors

Check

- Routine antenatal care includes

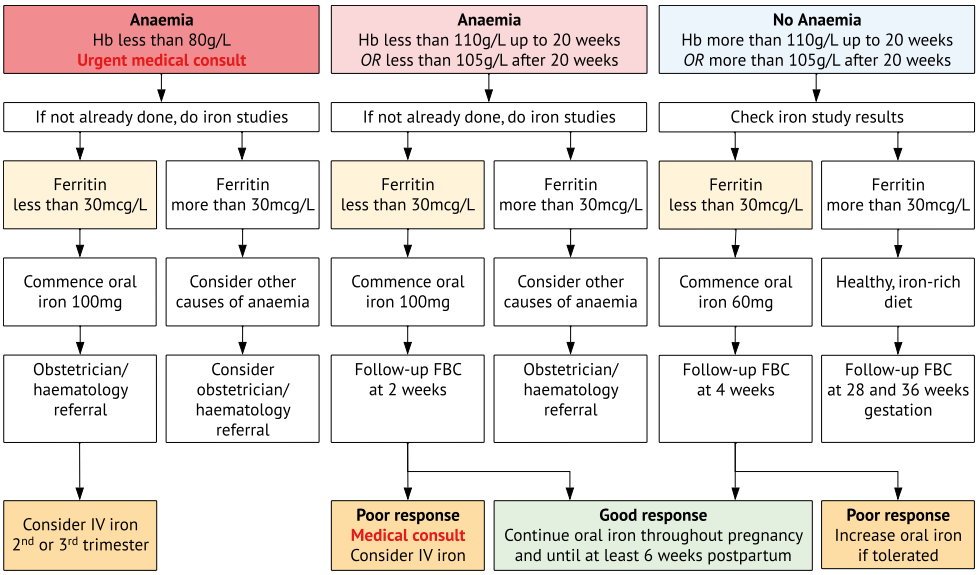
First antenatal visit	• Take blood for FBC, iron studies • POC Test — Hb
28 weeks	
36 weeks	

- A fall in MCV is the earliest sign of iron deficiency
- If no known iron deficiency anaemia *BUT* Hb less than 110g/L up to 20 weeks pregnant or less than 105g/L after 20 weeks — consider other causes
  - Take blood for CRP, serum B12, folate, TFT, LFT, UEC

Do

- If POC Test Hb less than 80g/L — **urgent medical consult**
- If POC Test Hb less than 110g/L up to 20 weeks pregnant or less than 105g/L after 20 weeks — treat as iron deficiency anaemia, start iron replacement
- **Medical consult** if
  - Unclear if iron deficiency or other cause of anaemia
  - Hb does not increase as expected (8–10g/L each week) over first 2 weeks of iron replacement
  - Hb still less than 100g/L after 4 weeks of oral iron

Flowchart 2.3 Management of iron deficiency



Do — iron deficiency anaemia

- Talk about access to healthy food — **refer** to dietitian
  - Getting enough iron and folic acid — red meat, fish, eggs, whole grain breads and fortified cereals
  - Include fruits and vegetables with meals
  - Avoid drinking tea with meals
- Give **vitamin C** oral — 500mg once a day to improve absorption of dietary iron
- Give **iron replacement**
  - Take blood for FBC 2 weeks after starting treatment and again 2 weeks after that — should see 8–10g/L increase in Hb each week
- If from an area where hookworm (STM, page 494) is/has been common *OR* if MCV low and eosinophil count raised — give **pyrantel** oral — adult 1g once a day for 3 days
  - **Do not** give ivermectin or albendazole in pregnancy

Iron replacement

Do not give iron supplement if Hb and iron studies normal

Oral iron

- **Iron–folic acid** oral — 1 tablet (more than 60mg elemental iron) once a day
  - If woman has side effects — give lower dose
  - Iron dose in pregnancy multivitamins may be lower than recommended
  - Take iron tablets with water or orange juice — not milk
  - Best taken on an empty stomach — 1 hour before meal or 3 hours after meals
  - If upset stomach a problem — take with food or at night
- To encourage woman to take iron–folic acid tablets regularly, explain
  - Why tablets are important
  - Normal that faeces can become dark in colour
- Encourage woman to tell you if she has side effects
  - Oral iron alone (without folic acid) can make discomforts of pregnancy worse — eg constipation, heart burn, nausea, indigestion and diarrhoea
- Tell woman to keep iron medicine away from children — risk of toxicity
- Continue until 6–8 week postnatal check, reassess

Iron IV infusion

- **Do not** use
  - In first trimester — dates must be checked with dating scan before giving
  - If signs of infection
- Use if insufficient time for oral supplements before expected birth date — **medical consult**
  - Consider for women who have a Hb less than 105g/L in second and third trimester as oral supplements unlikely bring it up to normal before birth
- Can be used if oral iron doesn't work or can't be used — **medical consult**
- **Ferric (iron) carboxymaltose** (eg *Ferinject*) IV infusion can be given in second and third trimester if
  - Prescribed by doctor, in consult with obstetrician in second trimester
  - Anaphylaxis kit and resuscitation equipment available
- Discuss risk of IV iron — injection site reaction and paravenous (surrounding tissue of vein) leakage causing skin staining
- Can safely be administered by
  - Slow IV bolus injection
  - IV infusion using a gravity feed giving set
  - IV infusion using an IV infusion pump (preferred)
- Do not restart oral iron until at least 5 days after infusion given
- Do not give more than 20mL (1,000mg) in a single dose. Give second dose at least 1 week after first

Table 2.10 Cumulative Iron Dose Calculation by weight and Hb level for Ferric Carboxymaltose (eg *Ferinject*)

Haemoglobin (g/L) (for person of body weight greater than or equal to 35kg)	**Body Weight 35kg to 69kg**	**Body Weight greater than or equal to 70kg**
Less than 100g/L	**1,500mg elemental iron total dose**	**2,000mg elemental iron total dose**
	• Week 1: 1,000mg	• Week 1: 1,000mg
	• Week 2: 500mg	• Week 2: 1,000mg
Greater than or equal to 100g/L	**1,000mg elemental iron total dose**	**1,500mg elemental iron total dose**
	Week 1: 1,000mg	Week 1: 1,000mg
		Week 2: 500mg

Do — Hb normal but iron studies show ferritin less than 30microgram/L

- Give oral iron replacement as above
- Check iron studies and Hb after 4 weeks

Do — megaloblastic (folate deficiency) anaemia

Anaemic with high MCV and low red blood cell folate

- **Medical consult** — before starting treatment
- Give **iron-folic acid** oral — 1 tablet (up to 100mg elemental iron) once a day

AND **folic acid** oral — 5mg once a day

- Take blood for FBC at 2 weeks then 4 weeks after starting treatment

Do — anaemia from other causes

- Anaemia due to vitamin B12 deficiency — can have serious short-term and long-term neurological consequences for baby
  - **Medical consult** — doctor may advise vitamin B12 supplement, usually IM
  - Talk with woman about foods rich in vitamin B12 — fortified cereals, seafood, liver, meat, cheese, eggs
- If anaemia due to parasitic disease, genetic causes, kidney disease, any other cause — **medical consult**

Follow-up

- Check FBC and iron studies results 4 weeks postnatal to ensure iron status has corrected
- Ensure babies born to anaemic mothers also have appropriate follow-up with provision of preventative oral iron supplementation — see Anaemia (weak blood) in children and youth (STM, page 177)

Diabetes in pregnancy

- Results in a high risk pregnancy with complications increased for both mother and baby
- Adverse (bad) outcomes can be minimised with good diabetes control

Medical conditions with high blood glucose levels

Gestational diabetes mellitus (GDM)

- High blood glucose first detected in the second half of pregnancy

Early GDM

- High blood glucose first detected before 2'0 weeks gestation but is below non-pregnant diabetes criteria
- Likely pre-existing prediabetes
- Increased risk of complications compared to standard GDM

Overt diabetes in pregnancy

- High glucose first detected in pregnancy but meets non-pregnant criteria for diabetes
- Treat as pre-existing diabetes during the pregnancy
- Can only confirm whether or not woman has type 2 diabetes after pregnancy

Pre-existing type 2 or type 1 diabetes

- Diagnosed before pregnancy

Diagnosis and management of diabetes in pregnancy is important

- Diabetes in pregnancy is common and increasing in all age groups
  - Affects one in five pregnant Aboriginal women
- Aim to keep BGL at normal levels to reduce complications
- Multidisciplinary team management is needed — involving primary care, midwife, obstetrician, diabetes educator, dietitian, nurse practitioner and endocrinologist
- Clear communication and consistency of care between services is important

Table 2.11 Potential complications of diabetes in pregnancy

Woman	Baby
All diabetes • Preeclampsia • Birth trauma • Post-partum haemorrhage	• Birth trauma • Prematurity • Macrosomia (large baby) • Low BGL in newborn • Increased risk of early onset type 2 diabetes and obesity • Congenital malformations • Miscarriage • Stillbirth • Intrauterine growth restriction (Small baby)
Pre-existing diabetes • Worsening of kidney disease and eye disease	
GDM • High risk of developing type 2 diabetes next 2–3 years	

Pre-pregnancy counselling for women with known diabetes

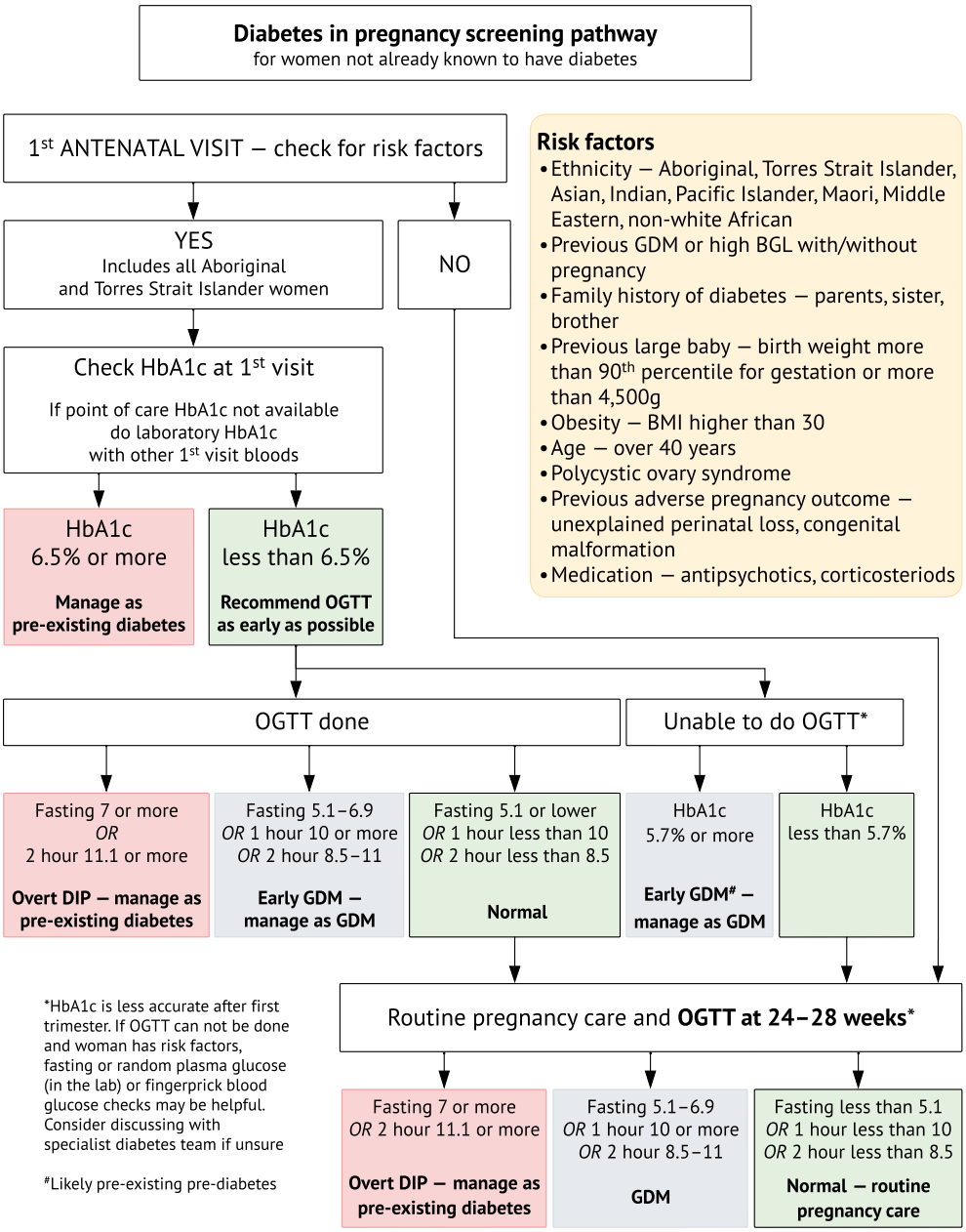
Optimising health in women with diabetes before pregnancy is needed to reduce risk of complications for both woman and baby

- Discuss pregnancy planning and contraception at routine check-ups with all women of childbearing age
  - If HbA1c over 9% suggest delaying conception (becoming pregnant) until close to or lower than 7%
- Talk about and assist women with
  - Target glucose-levels before pregnancy — HbA1c less than 6.5% without hypoglycaemia will minimise risks to woman and baby
  - Need to optimise BP, weight, nutrition and physical activity
  - Check woman is up-to-date with kidney and diabetes eye checks
- If planning pregnancy or not using reliable contraception
  - Review medications
  - Start folic acid oral — 5mg once a day — high dose due to increased risk of congenital anomalies with diabetes
- Monitor for pregnancy at routine visits. Tell woman to notify clinic as soon as thinks she is pregnant

Screening for diabetes in pregnancy

- First antenatal visit — screen all pregnant women who are not already known to have diabetes and have risk factors — best before 13 weeks pregnant
  - All Aboriginal women are at high risk — need to test at first antenatal visit
- 24–28 weeks pregnant — screen or re-screen all pregnant women not already known to have diabetes
- For tests and interpretation follow Flowchart 2.4

Flowchart 2.4 Screening pathway for women not already known to have diabetes



Blood glucose targets for pre-existing diabetes and GDM

Give advice on diet and physical activity

- start home BGL monitoring
  - Provide all women with glucometer and teach to check BGLs
- Self-monitoring 4 times per day — fasting and 2-hours after meals
- Advise to keep BGL diary. Bring diary and meter to each review
- Review BGL diary weekly — usually by diabetes educator or midwife
  - If BGLs within target — no change in management
  - If 2 or more readings above target in 1 week — review diet, physical activity and medicines
  - If BGLs significantly above target — may need more frequent diabetes educator or medical input for titration of therapy. May be done by telehealth
- Frequency of BGL self-monitoring can be reduced or increased according to progress
  - If BGLs on target with diet change only and normal foetal growth, reduce testing
  - If on insulin with meals, test 6 times per day — before and 2-hours after meals

Table 2.12 Monitoring and targets

When to check	Target BGL
Fasting (before breakfast)	5.0mmol/L or less
2 hours after starting meals	6.7mmol/L or less
Before lunch and dinner if taking meal-time insulin	Make sure not low (not under 4mmol/L)
If evidence of intrauterine growth restriction (small baby) , seek specialist advice about relaxing BGL targets	

Antenatal care for pre-existing diabetes

At first antenatal visit

Check

- Do checks for first routine antenatal visit — see Antenatal checklist (page 105)

Do

Medical consult — include urgent medicines review

- Continue metformin and/or insulin if already prescribed
- Stop medications that are not safe in pregnancy
  - Other glucose-lowering medicines
  - ACE inhibitor or ARB — consider safer options for BP control, eg methyldopa, labetalol
  - Statins and other lipid-lowering medicines
- May need to start insulin

Also

- Add to first visit routine investigations
  - Blood for HbA1c, TFT, UEC, B12, Urine ACR
- **Diabetes educator consult**. Can use telehealth
- Give **folic acid** oral — 5mg once a day until 12 weeks pregnant
- Give **iodine** oral — 150microgram once a day. Can be in multivitamin designed for pregnancy and breastfeeding
  - If woman has thyroid condition — **medical consult**
- Give advice on diet and physical activity to help control blood glucose — refer to dietitian
  - Review pre-pregnancy BMI and discuss healthy weight (page 114) gain targets
- Start home BGL monitoring
  - Give glucometer and consumables including diary and pen
- Arrange as soon as possible
  - Ultrasound scan to date pregnancy, if not already done
  - Obstetric review
  - Endocrinologist/physician review
  - Retinal screening, if not done within 3 months before pregnancy. If retinopathy present — repeat screening each trimester — seek ophthalmology advice for treatment
- Make sure woman is on recall system to be followed up after birth — see Postpartum follow-up of medical conditions (page 216)

Additional antenatal care

Additional care is needed because of increased risk of complications

Check

- Review BGL diary and glucometer every week — see blood glucose targets for pre-existing diabetes and GDM
- Monitor gestational weight gain — see Healthy weight in pregnancy (page 114)
- Extra ultrasounds as ordered by obstetrician — could include
  - Extra ultrasounds for foetal growth in the second and third trimesters

- Management is individualised and will be advised by the managing obstetrician

Do

- Once each trimester
  - Blood for UEC, LFT, HbA1c, Urine ACR
- Strongly encourage testing for foetal abnormalities (page 118)
- Education about diabetes in pregnancy
- Antenatal check every 2 weeks until 28 weeks pregnant
  - *THEN* every 1 week from 28–36 weeks
- At 32 week antenatal check — talk to woman about being added to Diabetes in Pregnancy Clinical Registers, if relevant to your jurisdiction
- Medical follow up as needed — at least every 4 weeks — for adjustment of diabetes medicines
- **Medical consult** for routine prevention of risk of preeclampsia
  - **Aspirin** oral — 100–150mg once a day with evening meal from 12 weeks until 36 weeks gestation
  - **Calcium supplement** oral — up to 1.5g once a day including dietary calcium intake from 12 weeks gestation
- Arrange for transfer to regional centre at 36 weeks to wait for birth — hospital birth

Antenatal care for GDM

At first antenatal visit after diagnosis

Do

- Routine antenatal check — see Antenatal checklist (page 105) *AND*
  - Blood for UEC, LFT, HbA1c, urine ACR
- Start home BGL monitoring
  - Give glucometer and consumables including diary and pen
  - Teach woman how to self-monitor and keep BGL diary
- **Medical consult**
- **Diabetes educator consult** — can use telehealth
- Review pre-pregnancy BMI and discuss healthy weight gain targets (page 114)
  - Most women can control blood glucose with diet and physical activity
- Arrange **obstetric review** as soon as possible
- Make sure woman on recall system are followed up after birth — see Postpartum follow-up of medical conditions (page 216)

Additional antenatal care

Additional care needed due to increased risk of complications

Check

- Review BGL diary and glucometer every week — see blood glucose targets for pre-existing diabetes and GDM
- Monitor gestational weight gain — see Healthy weight in pregnancy (page 114)
- Ultrasounds as ordered by obstetrician. Could include
  - Extra ultrasounds for foetal growth in the second and third trimesters
  - Management is individualised and will be advised by the managing obstetrician

Do

- Education about diabetes in pregnancy
- Antenatal check every 2–4 weeks until 36 weeks pregnant *THEN* every week from 36 weeks pregnant
  - If on insulin — see every week from 28 weeks
- At 28 and 36 weeks
  - Blood for UEC, LFT, HbA1c, urine ACR
- Medical follow up as needed — at least every 4 weeks — for adjustment of diabetes medicine
- Consider referral to tertiary (major hospital) diabetes service if BGL is often above target or if advice is needed on medical management
- Arrange for hospital birth — transfer to regional centre at 38 weeks to wait for birth

Education

- Importance of healthy diet, physical activity, healthy weight gain
- Complications — reassure that not all women develop complications and looking after GDM helps to keep woman and baby healthy
- Benefits of keeping BGLs within target range
  - Need to monitor and record own BGL in pregnancy
  - Medicines including insulin might be needed
- Need for extra checks in pregnancy
- Hospital birth recommended
  - Baby may also need special care straight after birth
- Advise which clinic staff will give more support and provide access to educational materials

Medicines for pre-existing diabetes and GDM

- **Must be prescribed by doctor or nurse practitioner**
- Medicines are needed for all women with pre-existing diabetes
- Medicines must be started in GDM when BGLs are very high or are not within target after dietary changes and physical activity have been trialled briefly (for a week)
- Choice of medicine must be based on individual woman's needs — consider preferences, gestation, BGLs and foetal growth
- Metformin and insulin are safe to use in pregnancy. Other diabetes medicines should not be used

Metformin

- Is a treatment option in pregnancy
- Crosses the placenta but there is no evidence of harm to the baby during pregnancy
- If woman is on metformin before pregnancy — continue
- For GDM — medicine options can be discussed
  - Half of women with GDM on metformin will also end up needing insulin
- Diarrhoea and nausea are common side effects — taking it everyday and after food helps
- Stop if ultrasounds show foetal growth restriction *OR* small-for-gestational-age *OR* if mother has inadequate weight gain if she has a low BMI (underweight)
- Use standard doses (STM, page 246) as for non-pregnant woman

Insulin

- Most women with pre-existing diabetes and about one-third of women with GDM will need insulin
- Recommended if blood glucose not controlled by diet and exercise or metformin. Continue to review diet in woman taking insulin
- See Table 2.13 for suggested regimen

Starting and titrating insulin treatment

- **Medical/diabetes educator consult** about best insulin regimen — the type of insulin depends on BGL pattern and if it is suitable for that woman
  - Women needing insulin in pregnancy should be referred to tertiary diabetes service

- **On advice of doctor or nurse practitioner, other clinicians can titrate insulin according to** Table 2.13
  - If low or persistent high BGLs — **medical consult**
  - After each change in insulin dose, monitor BGL for 2 days before making another change

Table 2.13 When and how to start and then titrate insulin

Timing of high BGLs prompting insulin start	**Suggested insulin type to start based on BGLs**	**Starting dose** Choose from range based on how high BGLs are & weight	**How to titrate insulin dose** If 2 or more BGL readings above target in the week before and have not corrected with diet/activity changes
Fasting (before breakfast) BGLs >5.0mmol/L	**Intermediate-acting insulin** (eg Protaphane)	4–8 units at bedtime	Increase by 2–4 units if fasting BGLs above target
Post-prandial (after meal(s)) BGLs >6.7mmol/L	**Short-acting insulin** (eg NovoRapid or Humalog)	2–6 units just before meal(s)	Increase by 2–4 units if BGLs after that meal above target (eg BGLs high after lunch, then increase insulin given before lunch)
Both fasting and after meals BGLs above target	**Basal-bolus regimen** • **Intermediate-acting insulin** (eg Protaphane) *OR* **long-acting insulin** (eg Optisulin/glargine), *AND* • **Short-acting insulin** (eg NovoRapid or Humalog) *OR* **Mixed insulin** (eg NovoMix30 or HumalogMix25) — not first line, use on specialist advice	**Intermediate- acting insulin** — 4–8 units before bed **Long-acting insulin** — 6–10 units at same time each day (usually evening) **Short-acting insulin** — 2–6 units just before meal(s) **Mixed** — 6–10 units with breakfast and dinner	**Intermediate/long-acting** — increase by 2–4 units if fasting BGLs above target **Short-acting** — increase by 1–4 units if BGLs after that meal above target **Mixed** — increase 2–4 units at a time. Need to consider both short and intermediate actions — **medical/diabetes educator consult**

Follow-up

- See — Postpartum follow-up of medical conditions (page 216)

Epilepsy in pregnancy

If woman fitting now

- If more than 20 weeks pregnant — see Fits in the second half of pregnancy **straight away** (page 47)
- If less than 20 weeks pregnant — see Fits — seizures (STM, page 76)

Epilepsy is the most common neurological problem in pregnancy. Always consider eclampsia or cerebral venous thrombosis as a cause of fitting in pregnancy — even if woman has history of epilepsy

Risks during pregnancy for women using antiepileptic medicines

- Woman may be concerned about risk to their baby when using antiepileptic medicines during pregnancy
  - Any antiepileptic drug can cause birth abnormalities
  - Risks need to be balanced against the effects of uncontrolled fits on both mother and baby
- Adverse effects of antiepileptic medicines
  - Lamotrigine and levetiracetam are the safest options
  - There is not much information about newer drugs, eg perampanel
  - Increased risk of depression and anxiety during pregnancy and the postpartum period
- Change in seizure frequency
  - About ⅓ of women with epilepsy have more fits while pregnant
  - Women who had fits in the year before getting pregnant are at the highest risk of increased number of seizures
  - Women who haven't had a fit for at least 9 months before getting pregnant have a 90% chance of staying seizure free during pregnancy
- If epilepsy is not controlled there is a higher risk of illness and death for woman
- Woman is not able to drive for 3 months if doses are changed

Do

For woman not yet pregnant

Talk about importance of reliable contraception

- If taking enzyme-inducing antiepileptics, eg phenobarbital, phenytoin, carbamazepine, primidone, topiramate, oxcarbazepine, felbamate
  - Best methods — IUDs or Depo-Provera injection
  - Not recommended — ENG-implant and progestogen-only pill
  - If emergency contraception needed — give double dose of ECP *OR* use copper IUD

- If not taking enzyme-inducing antiepileptics — all methods are effective
- If woman using lamotrigine and oral contraceptives — refer for **specialist advice**

For woman planning pregnancy

- Arrange health check
- **Medical consult** — arrange physician/neurologist review (can use telehealth) to decide on best antiepileptic and dose
- Best to change to safest antiepileptic at lowest dose needed for seizure control before getting pregnant
- Give **folic acid** oral — 5mg, once a day 3 months before and after conception

For woman already pregnant

- **Medical consult** as soon as you know woman with epilepsy is pregnant
- Give **folic acid** oral once a day
  - In first 12 weeks of pregnancy — 5mg
  - More than 12 weeks pregnant — 0.5mg *OR* at least 0.4mg in multivitamin designed for pregnancy and breastfeeding
- Arrange dating ultrasound
- Refer to physician and neurologist for joint management plan. May need
  - Monthly monitoring of medicine levels
  - Serial ultrasounds for foetal growth
- Talk with woman about antenatal screening tests for baby. Recommend she has tests, especially
  - Second trimester maternal serum screen, which detects neural tube defect — best done at 14–17 weeks but can be done up to 20 weeks
  - 18 week morphology ultrasound
  - Note type of antiepileptic being used on request form
- **Plan for hospital birth** — risk of fit in labour and in first 24 hours after birth
- Talk with woman about any known triggers for her fits (eg when she is very tired) and strategies to try to avoid these triggers during pregnancy
- Tell woman to let clinic know any time she has a fit — needs **medical consult**

Unplanned birth in community

- **Medical consult**
- Continue oral antiepileptic during labour
  - If can't tolerate oral medicine — **medical consult** about alternatives
- Have equipment and medicines ready in case woman has fit. See Fits — seizures (STM, page 76)
- See Labour and birth (page 176)
- Watch baby closely for breathing problems — some medications are sedating
- Give baby **vitamin K** IM at birth
  - If baby 1.5kg or more — 1mg (0.1mL)
  - If baby less than 1.5kg — 0.5mg (0.05mL)
- Send mother and baby to hospital with escort

Breastfeeding

- Encourage breastfeeding — antiepileptics pass into breast milk, but benefits of breastfeeding outweigh the small risk to baby
- If any concerns — get specialist advice, eg lactation consultant

Postnatal care

- If antiepileptic dose adjusted during pregnancy
  - Need to monitor antiepileptic blood levels, especially important if using lamotrigine
  - Plan to return to pre-pregnancy dose over first 1–2 weeks after birth
- Sleep deprivation can increase frequency of seizures — ensure woman is aware of this and has support
- **Medical follow-up** to plan monitoring of levels and dose adjustment

Group B Streptococcus infection

- Group B Streptococcus (GBS) bacteria found in rectum, vagina, urinary tract of healthy women
- Asymptomatic and only detected by screening tests
- If GBS present in vagina during labour and birth — baby at risk of infection
  - Leading cause of sickness and death in newborn babies
  - Infection in babies can cause pneumonia, meningitis, sepsis
  - Preterm babies most at risk

All women with history of previous GBS infected baby are given antibiotics in labour for all future births even if negative swab results

Do during pregnancy

At first antenatal visit

- Check file notes
- Ask woman if baby infected with GBS in previous pregnancy or if GBS detected in current pregnancy

If GBS positive urine anytime during pregnancy

- Must treat immediately — give **amoxicillin** oral — adult 500mg, 3 times a day (tds) for 5 days
  - If allergy to penicillin — **medical consult**
- See — Urine problems in pregnancy (page 168) for follow-up
- Will need antibiotics in labour if GBS positive urine at any point in pregnancy even if previously treated

GBS swab — 35-37 weeks pregnant

- Take combined vaginal (first) and anal swab (second) at 35–37 weeks pregnancy — can be self-collected (page 252) by woman
- If swab GBS positive
  - Record in file notes
  - **No** antenatal treatment needed
  - Explain meaning of positive result — will need antibiotics in labour
  - Advise woman to report signs of labour or rupture of membranes early so antibiotics can be started before baby is born

Do in labour

If woman GBS positive at any time during pregnancy

- Plan for birth in hospital

- If not possible to send to hospital before birth
  - Give antibiotics
  - Transfer mother and baby after birth
  - See Newborn needing special care (page 199)

Treat for GBS

- Woman with GBS positive swab or urine in this pregnancy
- Woman with previous baby infected with GBS
- If GBS status unknown or no GBS swab in last 5 weeks — give antibiotics if
  - Preterm labour
  - Premature rupture of membranes (page 50) (37 or more weeks pregnant)
  - Prolonged rupture of membranes — more than 18 hours or unknown time since membranes ruptured
- Give **benzylpenicillin** IV — adult 3g, single dose straight away
- *THEN* **benzylpenicillin** IV — adult 1.8g, every 4 hours until birth
  - If allergy to penicillin — **medical consult**
- Stop treatment immediately after birth

Hepatitis in pregnancy

- Mothers with chronic hepatitis B can breastfeed their babies regardless of the presence of cracked or bleeding nipples
  - Babies of these mothers are protected from hepatitis B infection at birth by the administration of hepatitis B immunoglobulin and hepatitis B virus (HBV) vaccination
- Mothers with hepatitis C can breastfeed their babies. If cracked or bleeding nipples — advise to express and discard milk until bleeding areas healed

Hepatitis B

Testing for hepatitis B

- Test all pregnant women regardless of recorded status
  - Take blood for HBsAg, anti-HBc, anti-HBs
- **Review result** — see Classification of hepatitis B status (STM, page 407)
  - Interpreting hepatitis B serology results can be hard — get help if needed
- **Medical consult** about need for further testing or immunisation
  - Immunisation recommended during pregnancy if benefits outweigh risks

Table 2.14 Risk of transmission of hepatitis B to baby

Mother's viral load	Intervention	Risk of transmission
High more than 200,000 IU/mL	None	90%
	Baby has hepatitis B immunoglobulin and hepatitis B immunisation at birth	8–10%
	Mother given antiviral treatment *AND* baby has hepatitis B immunoglobulin and hepatitis B immunisation at birth	Less than 2%
Low	Baby has hepatitis B immunoglobulin and hepatitis B immunisation at birth	Less than 2%

If woman HBsAg positive

Do

- LFT, UEC
- Hepatitis A — HAV IgG
- Hepatitis B — HBeAg, anti-HBe
- Hepatitis B viral load — HBV DNA — best at 24–26 weeks, but can do any time between 20 and 28 weeks
- Hepatitis C — anti-HCV
- HIV serology
- Make sure other blood tests from antenatal checklist (page 105) are done

Urgent specialist consult — doctor should phone specialist for advice if

- Hepatitis B viral load more than 200,000 IU/mL
- *OR* raised LFT
- If hepatitis B viral load very high — antiviral medicine in third trimester may reduce risk of transmission to baby. Safe in pregnancy

Manage infection risk

- Manage as hepatitis B in non-pregnant women (STM, page 407)
  - Talk with woman about reducing risk of infecting others — use of condoms with new or non-immune partners, not sharing needles, razors or toothbrushes
- Offer testing for hepatitis B to sexual partners and household contacts
  - Household contacts may be eligible for free hepatitis B immunisation
- Advise staff involved in birth of hepatitis B status
  - Need to avoid invasive procedures before and during birth
  - Particularly important for woman with high viral load
  - Baby will need immunoglobulin and immunisation at birth

Babies of HBsAg positive mothers

- Babies infected with hepatitis B at birth have 90% chance of long-term infection, high risk of severe complications
- Give **hepatitis B immunoglobulin** *AND* **hepatitis B immunisation** at birth to prevent infection
- Carefully wash injection sites with warm water and dry thoroughly before giving
- Test baby at 9-18 months of age to check if infected during birth — take blood for HBsAg, anti-HBc, anti-HBs

If woman HBsAg, anti-HBc and anti-HBs negative

This result suggests that woman may have no effective protection against hepatitis B from either previous infection or immunisation and is at risk of hep B infection

- High risk if
  - Household member with hepatitis B
  - Sexual behaviours that increase risk of contracting hepatitis B, eg. multiple partners, partner with Hep B
  - Intravenous drug use
- If high risk — give woman hepatis B immunisation during pregnancy
- If not high risk — give woman immunisation postpartum (after birth of baby)
- Check HAV IgG. If non-immune — can give combined HAV/HBV immunisation

Hepatitis C

Risk factors for hepatitis C

- Intravenous drug use, needle sharing
- Tattooing or body piercing
- Has been in prison

Testing for hepatitis C

- Offer testing for hepatitis C (anti-HCV) at first antenatal visit
  - If anti-HCV positive — additional test for HCV PCR needed
- Hepatitis C test can take up to 3 months to become positive after infection — known as 'window' period. Consider re-testing at 3 months if woman experienced risk factors during that period

If woman hepatitis C RNA positive

Check

- Check hepatitis A and hepatitis B status. If not immune — offer immunisation

Do

- Take blood for LFT, FBC, INR, UEC
- At beginning of pregnancy take blood for HCV viral load, genotype testing
- If signs of advanced liver disease (STM, page 407) — **medical consult** for urgent referral to liver clinic
- If no signs of advanced liver disease — **medical consult** about hepatitis treatment after baby is born

Babies of hepatitis C positive mothers

- About 5% of babies born to mothers with hepatitis C are infected during birth
- Advise staff involved in birth of hepatitis C status — can modify practices to protect baby
  - Foetal scalp monitoring contraindicated during birth
  - Avoid delivery methods that may damage baby's skin
- Caesarean section doesn't reduce risk of baby becoming infected
- Carefully wash injection sites with warm water and dry thoroughly before giving any injection after the birth
- Test baby at 12–18 months of age — take blood for anti-HCV
  - Before this age tests may be positive due to antibodies transferred from mother to baby, even if baby not infected
  - Can test after 12–18 months if missed

Supporting resources

- Menzies Hep B story App

Hypertension (high BP) in pregnancy

Systolic BP 140mmHg or more and/or diastolic BP 90mmHg or more
- Confirm by repeated readings over several hours
- Re-check with manual sphygmomanometer if available

Red Flags — Urgent Medical Consult
- Signs and symptoms of preeclampsia and eclampsia — Table 2.16 (page 159)
- Systolic BP 140mmHg or more
- Diastolic BP 90mmHg or more
- Protein in urine for first time or increasing proteinuria

Types of hypertension (high BP) in pregnancy
- Chronic hypertension
  - Known to have high BP before pregnancy
  - *OR* high BP recorded in first 20 weeks of pregnancy
- Pregnancy-induced hypertension
  - High BP first recorded when more than 20 weeks pregnant
- Preeclampsia
  - More than 20 weeks pregnant
  - High BP *AND* one *OR* more other signs or symptoms — Table 2.16
  - **If systolic BP 170mmHg or more OR diastolic BP 110mmHg or more — medical emergency — urgent medical consult**

Hypertension can cause
- Poor growth of baby
- Death of unborn baby
- Placental abruption (part or all of placenta comes away from wall of uterus)
- Preterm labour or preterm birth
- Worsening of chronic high BP — 'end-organ' damage for mother, eg to kidneys, liver, brain
- Eclampsia (seizures when severe high BP)

Check

- Assess risk factors for preeclampsia at first antenatal visit — Table 2.15
  - If risk factors — **medical consult**
  - May need to see obstetrician early in pregnancy
  - May suggest low dose aspirin or calcium supplements to reduce risk
- If risk factors — urinalysis for protein each visit

Table 2.15 Risk factors for preeclampsia

Medical	History	This pregnancy
• High BP • Kidney disease, diabetes • Overweight or obese • Autoimmune disease, eg Systemic Lupus Erythematosus (SLE)	• Previous pregnancy with high BP or preeclampsia • Family history of preeclampsia • New paternity (new partner)	• Mother aged 40 years or over • First pregnancy or more than 10 years since last pregnancy • Twin/multiple pregnancy

Do — if BP high at antenatal visit

- Take BP again after woman has rested for 10 minutes
- Finish routine antenatal check (page 105) — note if protein on U/A
- Check file notes for
  - Risk factors for preeclampsia
  - Gestation (how many weeks pregnant)
  - U/A or albumin creatinine ratio (ACR) results earlier in pregnancy — any protein
  - Last urine MC&S
- Ask about symptoms of preeclampsia — Table 2.16
- Check for signs of preeclampsia — Table 2.16
- **Medical consult** about findings and management
  - If managing as preeclampsia — see Preeclampsia **straight away** (page 41)
  - If managing as high BP — see Pregnancy-induced high BP or Chronic high BP

Table 2.16 Signs and symptoms of pre-eclampsia and eclampsia

Body organ or system	Signs	Symptoms
Cardiovascular	• High BP • Platelet count less than 100,000/microL • Bleeding from venipuncture	• Swollen ankles
Lungs	• Pulmonary oedema	• Breathlessness
Kidneys	• More than 2+ protein on U/A • Serum creatinine more than 90micromol/L	• Low urine output (less than 0.5mL/kg/hr)
Liver	• Tender abdomen — right upper quadrant	• Severe epigastric or right upper abdomen pain • Nausea and vomiting
Neurological	• Fits • Brisk reflexes, muscle spasms • Stroke	• New headache that doesn't go away • Visual changes (eg shooting stars, spots)

Pregnancy-induced hypertension

Need to send to hospital to check for preeclampsia and work out management plan

Check

- If signs or symptoms of preeclampsia — urine for U/A and MC&S

Do

- Bloods for FBC, UEC, LFT
- **Medical consult** about sending to hospital — straight away or non-urgent referral
- If sending to hospital straight away
  - **Medical consult** about whether to start anti-hypertensive medicine to reduce BP
  - Check BP every hour until transfer
  - **Urgent medical consult** if systolic more than 160mmHg or diastolic 100mmHg
- If non-urgent referral
  - See **every day** while waiting for hospital appointment
  - Do routine antenatal check (page 105)
  - Ask about symptoms of preeclampsia — Table 2.16
  - **Medical consult** every day about findings

If ongoing management in community

After review in hospital — may be managed in community. Management plan should include

- More frequent antenatal checks
  - Ask about symptoms of preeclampsia at each visit — Table 2.16
  - **Medical consult** about findings from each visit
- Regular hospital checks, including obstetric ultrasounds and cardiotocogram (CTG)
- Plan for birth in hospital — may need epidural or caesarean section

BP control

- BP target — usually less than 140/90mmHg
  - Plan to send to hospital if preeclampsia or severe high BP develop
- Do not use ACE inhibitor or ARB to control BP — contraindicated in pregnancy
- Often use methyldopa or labetalol
  - Always use if systolic BP 160mmHg or more or diastolic BP 100mmHg or more
  - May be used if systolic BP 140–160mmHg or diastolic BP 90–100mmHg

Investigations

- Take blood for FBC, UEC, LFT once a week, or twice a week if preeclampsia
- Take blood on day transport is available — so it gets to lab in time for platelet count
- If low platelet count or falling Hb — take blood for clotting studies, blood film, LDH, fibrinogen
- Collect urine for ACR (albumin creatinine ratio rather than 24 hour collection) once or twice a week

Follow-up

- See Postnatal follow-up (page 217) of women with high BP in pregnancy

Chronic hypertension

If planning pregnancy — see Preconception care (page 96)

Check

First antenatal visit

- Check file notes — history of kidney disease, BP management plan
- Also take blood for UEC, LFT, uric acid
- Urine albumin creatinine ratio (ACR)

After 20 weeks

- For signs or symptoms of preeclampsia — Table 2.16

Do

First antenatal visit

- **Medical consult** — medicines review
  - Review beta blockers and diuretics
  - Stop ACE inhibitor or ARB — both contraindicated in pregnancy
  - Use a safer BP lowering medicine — **methyldopa** oral — 125mg twice a day (bd) increasing as required up to 500mg 3 times a day (tds)
    OR **clonidine** oral — 50microgram twice a day (bd) increasing as required up to 300microgram twice a day (bd)
    AND **aspirin** oral — 75–150mg at night
    AND **calcium supplement** oral — 1.5g daily
  - Arrange renal ultrasound (if not already done) to look for causes of high BP. Do at same time as obstetric ultrasound
  - Arrange medical follow up, refer to specialist and obstetrician as required

Follow management plan

- Routine antenatal care (page 107)
- Additional monitoring and treatment as advised by specialist
- BP target
- Plan for birth in hospital — may need epidural or caesarean section

Follow-up

- See Follow-up of medical problems in pregnancy — High BP (page 217)

Unplanned birth in community

If woman with high BP goes into labour in community

Do not

Do not give nifedipine to stop labour unless instructed by obstetrician — may be asked to give **nifedipine** to control BP

Do not use ergometrine alone or in combination. Only use plain **oxytocin**

Do

- **Urgent medical consult** about
  - Sending to hospital
  - Stopping labour with nifedipine
  - Management plan if birthing in community
- If labour proceeds
  - See Labour and birth (page 176)
  - Give good pain relief as directed by doctor or midwife
  - Get ready for a sick baby — see Newborn resuscitation (page 7)
  - Be ready in case woman has a fit (page 47)
  - Send mother and baby to hospital after birth — still at risk of complications

Rheumatic heart disease in pregnancy

Acute rheumatic fever (ARF) and rheumatic heart disease (RHD) are common and under-diagnosed in remote Australia

- If planning pregnancy — see pre-pregnancy counselling (page 96)

Red Flags — Urgent Medical Consult

- Pregnant women with RHD or suspected RHD
- If taking warfarin
- Signs or symptoms of heart failure
- Unplanned labour or birth in community

Do

- Ask about ARF/RDH
  - Check file notes and contact Rheumatic Heart Disease Register for more information
- **Medical consult** as soon as possible for pregnant woman with RHD or suspected RHD
  - Arrange early obstetric ultrasound, ECG, ECHO and dental check
  - **Urgent referral to obstetrician and physician/cardiologist as soon as possible**

Talk with woman about

- Looking after herself and continuing her medicine
- More frequent antenatal checks and hospital visits to watch for problems
- Seeing midwife or doctor any time she is concerned
- Support services that can help her and assist with moving closer to hospital for birth

Antenatal care

- At each visit ask about — physical activity, sleeping, any need to sleep sitting up, tiredness, light-headedness, dyspnoea (shortness of breath)
- If signs or symptoms of heart failure (STM, page 134) or problem that could cause heart failure (eg anaemia, infection, high BP) — **urgent medical consult**
- Follow joint management plan from physician/cardiologist and obstetrician
- Continue routine antibiotic prophylaxis (STM, page 342) during pregnancy
- Any woman on warfarin needs **urgent medical consult**
  - Anticoagulation therapy usually needs to be changed — usually to heparin (eg enoxaparin) given by daily injections
- Always plan for birth in hospital — delivery in hospital ICU may be required

Prevention of endocarditis

- See Acute rheumatic fever and rheumatic heart disease (STM, page 342)
- Highest risk of endocarditis (infection inside heart) in women with
  - Rheumatic heart disease
  - Artificial heart valve
  - Heart transplant
  - History of bacterial endocarditis
  - Certain congenital heart problems
- May need preventive antibiotics (STM, page 342) before invasive, surgical or dental procedures
  - Always do **medical/dental consult**

Unplanned labour or birth in community

- Put in IV cannula — largest possible, insert 2 if time
  - **Medical consult** before giving IV fluids — too much can cause heart failure
  - Record frequent observations and fluid balance during labour and after birth
- Monitor closely. If woman becomes short of breath
  - Sit upright
  - Give **oxygen** to target O_2 sats 94–98% *OR* if moderate/severe COPD 88-92%
  - **Urgent medical consult**
- See Labour and birth (page 176)
  - **Do not** give ergometrine alone or in combination after birth — after delivery only use plain oxytocin IM — 10 international units single dose — placenta should separate within a few minutes

Supporting resources

- RHD Australia ARF/RHD guidelines

Thromboembolism (blood clots) during and after pregnancy

- Deep vein thrombosis (DVT) is a clot in the deep veins of legs or pelvis, usually with leg swelling and pain, sometimes redness and warmth
  - In pregnant women DVT most often occurs in the left leg
- Parts of the clot may embolise (break off) and travel through blood vessels to the lungs — a clot in the lung is a pulmonary embolus (PE)

Red Flags — Urgent Medical Consult	
Deep vein thrombosis (DVT)	**Pulmonary embolus (PE)**
• Usually swelling in 1 leg but can be in both • May have pain in calf, lower abdomen or groin • Affected leg may be warm, red or tender • Previous DVT, PE or known thrombophilia • Any risk factor after birth • 2 or more risk factors before and during birth	• Breathlessness • May have low grade fever • Fast pulse, fast breathing • Feeling faint, fainting, collapse • Sudden onset of chest pain • Coughing up blood • Previous DVT, PE or known thrombophilia • Any risk factor after birth • 2 or more risk factors before and during birth

Risk factors (strong risk factors in bold) include

- Pregnancy — **highest risk after birth**, can also happen during pregnancy or birth
- **Previous DVT or PE**, except if it was a single event related to a major surgery
- Known condition with **thrombophilia (increased tendency to clot)**
- Family history of clots in a first-degree relative
- Obesity (BMI more than 30)
- Age more than 35 years
- Recent surgical procedure (eg caesarean section, appendicectomy)
- Immobility (eg lower limb injury, long distance travel)
- Current preeclampsia (page 41)
- Smoking
- Multiple pregnancy
- In vitro fertilisation (IVF)
- Transient risk factors (eg dehydration, sepsis)

Ask

- Ask all pregnant women and check file notes for history of DVT, PE or thrombophilia (clotting disorder)

Check

- If woman has multiple risk factors *OR* previous DVT or PE, or known thrombophilia — **medical consult**
  - Refer to obstetrician or physician as soon as possible
  - Consider DVT prophylaxis (treatment to prevent clots) in this pregnancy
- Look for red flag symptoms of DVT or PE at every visit during and after pregnancy

Do

- If you suspect DVT or PE — **urgent medical consult**
  - Send to hospital to confirm diagnosis and start treatment
  - Usually treat with low molecular weight heparin (eg enoxaparin) subcutaneous injections during pregnancy
  - May also treat with warfarin tablets — not during early pregnancy
- All women with DVT or PE in current or previous pregnancies must plan to birth in hospital

While waiting for evacuation

- **Do not** lie woman flat on her back. Sitting upright may be best

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL

Do

- Give **oxygen** to
  - target O_2 sats 94–98%
  - *OR* if moderate/severe COPD 88–92%
- Put in IV cannula — largest possible, insert 2 if time
- Give other treatment as directed by doctor, eg pain relief, medicine to stop clots
- Reassure woman and keep her calm. Have someone stay with her if possible

Follow-up after birth

- **Do not** give combined oral contraceptive pill to woman with history of DVT or PE
  - Other hormonal contraception may be suitable **after medical consult**
- Emphasise importance of continuing anticoagulant treatment for whole time as advised by doctor
  - Treatment needs to continue for 3–6 months after birth
- Reassure her that breastfeeding is not affected by anticoagulation medicines

Urine infections in pregnancy

Always consider STI as cause of dysuria (pain on passing urine) — see STI checks for women (page 246)
Urinary tract infections (UTI) cause increased risk of preterm labour, low birth weight baby, perinatal death
Problems include

- Bladder infection — lower UTI
  - Asymptomatic bacteriuria — no symptoms only diagnosed by testing urine
  - Cystitis with symptoms eg dysuria (pain on passing urine — lower UTI)
- Pyelonephritis (kidney infection) — upper UTI

Ask

- STI symptoms — dysuria (pain on passing urine), discharge, ulcers, sores, dyspareunia (pain when having sex)
- UTI symptoms, upper and lower — can have upper and lower UTIs at same time

Table 2.17 Upper and lower urinary tract infection symptoms

Upper UTI symptoms	Lower UTI symptoms
• Flank/loin pain — pain in back or side between ribs and pelvis • Fever, rigors (shakes) • Nausea, vomiting If present — consider Pyelonephritis (kidney infection) (STM, page 486)	• Burning, discomfort, dysuria (pain when passing urine) • Passing urine more often than usual (frequency) • Lower abdominal pain • Haematuria (blood in urine)

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- U/A
- Head-to-toe exam — with attention to abdomen

Do

Interpreting U/A

- If blood or protein and no infection on previous MC&S — **medical consult**
- If protein only — **medical consult**
  - *OR* If second half of pregnancy — see Preeclampsia (page 41) and **medical consult**

- Positive nitrites usually means UTI — but negative nitrites does not mean no UTI
- Positive leucocytes are common in well women *AND* women with UTIs or STIs
- Urine for MC&S if
  - Previous UTI in this pregnancy
  - Nitrites or leucocytes on U/A
  - UTI symptoms

Treat symptoms

- **Do not give trimethoprim**
- **Always** treat UTIs in pregnancy, including asymptomatic bacteriuria
  - Encourage oral fluids
  - Urinary alkalinisers (eg Ural) may help relieve symptoms but don't treat infection
- If upper UTI symptoms — see Pyelonephritis (kidney infections) in pregnancy
- If lower UTI symptoms *OR* nitrites on U/A — **do not** wait for MC&S result — give antibiotics **straight away**
  - **Nitrofurantoin** oral — 100mg, 4 times a day (qid) for 5 days — **do not** give if near delivery *OR* 36 or more weeks pregnant *OR* kidney disease (eGFR less than 45)
  - *OR* **Cefalexin** oral — 500mg, twice a day (bd) for 5 days
- If lower UTI GBS positive on urine culture — always treat straight away
  - Give **amoxicillin** oral — adult 500mg, 3 times a day (tds) for 5 days
  - If allergy — **medical consult**
- If GBS positive at any point in pregnancy — will need antibiotics in labour (page 152). Plan for hospital birth
- If STI symptoms — also see Vaginal discharge (page 264) or STI checks for women (page 246)

Follow-up

- Check MC&S result and antibiotic sensitivities — change antibiotic if needed
  - Make sure suggested antibiotic is safe in pregnancy
- 1 week after antibiotics finished — do U/A and send urine for MC&S
  - If still has infection — **medical consult** for repeat antibiotics
  - If frequency or pain on passing urine *OR* nitrites on U/A but no infection on MC&S — STI check (page 246) and **medical consult**

- After first UTI
  - U/A at every antenatal visit
  - MC&S every month until baby born — even if U/A normal
- If woman has second or persistent UTI in pregnancy — **medical consult** about preventive antibiotics or further tests
  - If renal ultrasound needed — can be done at same time as obstetric ultrasound. Use separate request form

Pyelonephritis (kidney infections) in pregnancy

Pyelonephritis in pregnancy needs to be treated in hospital with IV antibiotics

- Usually only one kidney at a time but can affect both
- More common in second and third trimester

Look in file notes

- How many weeks pregnant, when baby due to be born
- Urine or kidney problems in the past
- Abnormality of urinary tract
- Urine MC&S results in current pregnancy
- Allergies
- Current medicines

Ask

- Fever — feeling hot then cold, may be shivering
- Nausea or vomiting
- Flank/loin (one sided) pain
- Abdominal pain, contractions

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- U/A — mid-stream urine
- Head-to-toe exam — with attention to abdomen
  - Tenderness, rebound, guarding — see Abdominal assessment (STM, page 332)
  - Loin tenderness
  - If you feel contractions — see First stage of labour (page 177)

Do

- If you suspect pyelonephritis — **urgent medical consult** to send to hospital
- Put in IV cannula — largest possible, insert 2 if time
- Blood cultures FBC, UEC, urine for MC&S
- Start **normal saline** — 1L at 125mL/hr, or as directed by doctor
- If pain relief needed- See Pain management (STM, page 326)
- **Medical consult** about starting antibiotics
  - Usually **ceftriaxone** IV — adult 1g, single dose
  - If unable to give IV — give IM mixed with **lidocaine (lignocaine) 1%**
  - If allergy — **medical consult**

Follow-up

- Antibiotic treatment for total of 10–14 days. Usually completed in community after discharge from hospital
  - Usually oral — monitor to make sure all taken
  - *OR* may be IV as outpatient
  - If not sure — **medical consult**
- Urine MC&S at least 48 hours after antibiotic treatment finished
  - If still positive — **medical consult**
- MC&S every month (even if U/A normal) until baby born
- **Medical consult** about need for preventive antibiotics for rest of pregnancy

3. Labour and birth

Introduction — labour and birth

In traditional Aboriginal culture birthing is strictly the concern of women and governed by Women's Law (the 'Grandmother's Law'). Many older women, known as traditional birth assistants, have this knowledge. Older women and traditional birth assistants talk about birthing on country, with babies connected by birth and ritual to that country.

Traditionally, women gave birth well away from the camps. Women birthed alone or were looked after by birth assistants or female relatives of the right skin. Rules about which relatives are 'right skin' vary by region. See Looking after women's health (page xii) for where to find more information.

Traditional practices governed how the cord was managed, including cutting the cord after the placenta (traditionally known as the birth bag) was delivered, cutting the cord longer than what is now normal, crushing with a stone instead of cutting and tying the cord with hair or string. A long strand of cord may also be put around the baby's neck.

Management of the placenta is also of cultural importance. Old women say the placenta is sacred, and should not be handled. Traditionally, the placenta was buried in a hole at the birth site, often dug by the mother, then a good hot fire lit on top. Women relied on a fire for warmth and healing.

After the birth, traditional practices focused on stopping bleeding, healing, warming and making the mother and her baby spiritually strong. Traditional smoking ceremonies would be held for the baby and the mother. Women stayed isolated for up to a week after the birth. Appropriate relatives visited, bringing special food like kangaroo, sweet potato, and wild bananas or other bush foods depending on the season. The father usually didn't see the mother or the baby during this time.

Birthing places

Women from remote communities are strongly encouraged to birth in a regional hospital, in line with health service policies. Give enough information in the antenatal period to prepare the woman for going to a regional centre. Include advice about living and hospital arrangements, the birth experience, and having support people with her.

Birthing in hospital may be isolating and frightening due to unfamiliar staff (sometimes male), strange surroundings, and language barriers. Lack of

knowledge about the birth experience can contribute to fear and feelings of isolation. Ongoing education is an important part of antenatal care. Good preparation can help reduce fear, and make the unknown less daunting. Strategies include a tour of labour ward and postnatal area, having an interpreter available and meeting maternity unit staff. It may be helpful to identify family or others in town who can support the woman while she waits.

Women may wish to follow some of their traditional practices after the birth. If in Alice Springs, she can go to Congress Alukura (women's health clinic) for traditional ceremonies or have them when she returns to her community.

Unexpected births 'out bush'

Births still occur unexpectedly in remote communities. Sometimes women don't agree with birthing in hospital for a variety of personal reasons and beliefs. Occasionally a baby is born in the bush with traditional birth assistants supporting the woman and practising Law and culture. Clinic staff may only find out when labour is well established or after the baby is born.

If a woman presents in labour and there is no time to send her to hospital — try to close the clinic and ensure birthing is private. Ask a female ATSIHP, ACW, or SWSBSC worker about the appropriate practice in this community. The woman can choose appropriate relatives and birth assistants to support her. Clinic staff should work with these women in an open, cooperative and culturally appropriate way. Traditional birth assistants have a wealth of knowledge and beliefs to help the woman through labour. They are skilled at massage, easing pain by rubbing the woman's back and encouraging the baby to be born by rubbing the woman's belly.

After checking the placenta, ask the mother, ATSIHP, or birth assistants what to do with it. Check if it can be kept in the fridge or freezer. The mother may want to take it home and bury it on her traditional birth country. Old women are worried by stories that placentas are burned in the clinic rubbish bins or buried where dogs can get to them. They may not want the placenta stored in a freezer, saying that this causes sickness from the cold to enter the mother.

The mother and baby may still need to be sent to hospital for postnatal care. If not, the woman, female ATSIHPs and relevant family members will decide where the woman will stay and who is allowed to see her after the birth.

Cultural practices may take place in the community after a birth. Health staff need to be aware of these customs so they don't interfere with traditional practices or protocols. Staff are sometimes invited to attend and participate if culturally appropriate. An invitation is a sign of respect and should not be assumed.

Labour and birth

Birth is natural and not usually dangerous but in a remote clinic you need to be ready in case something goes wrong

- **Always call for help** — get midwife/doctor/obstetrician on speaker phone, if none locally
- Find support people, if possible female ATSIHP or older women familiar with birthing
- Reassure woman and explain what is happening. Have someone stay with her for support
- Women who present unexpectedly in labour may
  - Have had little or no antenatal care
  - Be more likely to be in preterm labour
  - Have declined transfer to a regional centre to wait for birth

Labour

- **Labour pains** are caused by contractions (tightening of uterus)
  - Between contractions uterus is relaxed
  - During contractions the uterus tightens — put your hand on woman's abdomen to feel this happening
  - Each contraction pushes baby down on cervix and it opens a little more
- **Labour has started** when there are regular, painful contractions — usually lasting 1 minute, occuring every 2–5 minutes
- **Membranes ruptured** (waters have broken) when liquor (clear fluid) loss from vagina — doesn't always mean birth will happen soon
- Check colour of liquor (waters). Can be
  - Clear or pink — normal
  - Bloody — mixed with mucus ('show') — normal unless 'frank ' blood loss
  - Greenish/brown — meconium (baby poo) stained — baby may be distressed
- **Baby is coming** when uncontrollable urge to push, grunting, wants to go to toilet to pass faeces, perineum or anus bulging *AND/OR* part of baby seen when labia parted, usually the head
  - If cord seen — see Cord prolapse (page 65) **straight away**
  - If bottom or feet seen — see Breech birth (page 60)

First stage of labour

From start of labour until cervix fully dilated

If woman arrives pushing and birth about to happen — see *Getting ready to birth baby* **straight away** (page 57)

Check as much as you have skills and time to do

Ask

Ask woman, check notes and have helper phone hospital or other clinics for relevant information

- Is there more than 1 baby
- Is baby moving
- Have movements gotten less over the last 24 hours
- When labour (pains) started

What is happening now

- Contractions
  - How often, how long — ask woman to tell you each time one starts
  - Time over 10 minutes
- Membranes intact or ruptured
  - If fluid loss — when did it start and how much
  - Colour, smell, blood or mucus

Obstetric history

- When is baby due
- Antenatal care — problems or infections during pregnancy, medical or obstetric, eg positive GBS, untreated STI, diabetes, anaemia, UTIs
  - Obstetric ultrasound report — number of babies, position of placenta
  - Blood group
  - Latest test results
- Number of previous pregnancies, number of live births, types of birth, multiple births
- Problems during or after past births — high BP, pre-eclampsia, postpartum haemorrhage (bleeding after birth)

Medical history

- Medicines, allergies, substance use
- Bleeding disorders, diabetes, heart disease, kidney disease, high BP

Check

Do not do vaginal exam unless you are a midwife and have spoken to the on-call obstetrics team

Table 3.1 Timing of required checks

Check	When	Normal observations
Woman's observations	• BGL • Repeat pulse hourly • Check Temp and BP every 4 hours • If any observations abnormal — repeat in 30 minutes or **medical consult**	• Pulse less than 100 bpm (not during a contraction) • Temp less than 37.5°C ▸ If elevated **medical consult** • BP — less than 140/90mmHg ▸ If high BP — **medical consult**
Contractions	• Over 10 minutes — how often, how long, how strong • Repeat every 30 minutes	• Contractions — become stronger, last longer and get closer together • Uterus — soft and no pain between contractions • Baby's head (or presenting part) — continues to move down into pelvis
Vaginal fluid loss — colour of liquor, blood loss	• Every hour	• Clear or pink
Ask woman to try to pass urine and do U/A	• Every 2 hours	• U/A — no more than trace of ketones or protein • Blood and leucocytes common but need **medical consult**

Do

- **Medical consult** to talk about
  - Stopping labour (page 55)
  - Sending to hospital
  - Pain relief (STM, page 326) — consider natural methods (breathing, relaxation, massage, heat) *AND/OR* medicines (nitrous oxide, opioids)
  - Antibiotics if unknown or positive GBS
  - Oxytocin for delivery of placenta and if bleeding after birth
- Put in IV cannula — largest possible, insert 2 if time
- **If woman less than 37 weeks pregnant** — help to mature baby's lungs by giving
  - **Betamethasone** IM — 11.4mg — 2 doses 24 hours apart
  - *OR* **Dexamethasone** IM — 6mg — 4 doses 12 hours apart
- Make sure woman has emptied her bladder
- Put clean pad between woman's legs and monitor loss
  - Small amount of blood and mucus ('show') is normal

- If more than 50ml vaginal bleeding — see Bleeding in pregnancy (page 33) — 1 soaked pad is equal to about 100ml blood loss
- If meconium-stained liquor (green or brown vaginal fluid loss) — **medical consult**

- Let woman be in any position that makes her comfortable
  - Upright positions help labour/birth more than lying on back — Figure 3.1 for examples
  - If woman wants to lie down — encourage her to use wedge to tilt her to left side

Figure 3.1

Second stage of labour

From cervix fully dilated until birth of baby

Getting ready to birth baby

Do first

- If not already in place, put in IV cannula — largest possible, insert 2 if time
- Have helper collect birth and resuscitation equipment (page 2)
- If you have incubator — turn on, it needs time to heat up

Birthing baby

Have helper read out these instructions as you go along

- Let woman birth baby in any position she wants but remind her **upright positions are best** — see Figure 3.1 for examples
- If she chooses to lie down — encourage her to lie on her left side or use a wedge to tilt her to the left — **lying flat on her back can be dangerous for mother and baby**

- Woman may pass faeces when straining to push. This is normal but can be embarrassing for her — gently remove, wiping away from baby

In normal birth

- Baby will present (arrive) head first, usually with face toward mother's back
  - If bottom or feet first — see Breech birth (page 60)
  - If cord first — see Cord prolapse (page 65) **straight away**
- Baby will be bluish colour at birth but becomes pink with first few breaths
- Vaginal discharge will be clear or pink before birth, may be mucoid and/or bloody — should not be green or brownish

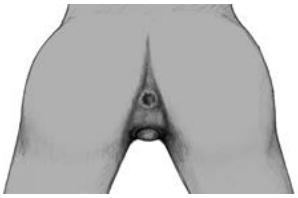


Figure 3.2

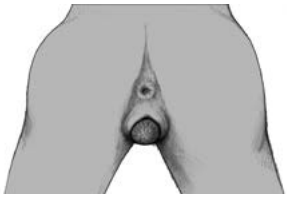
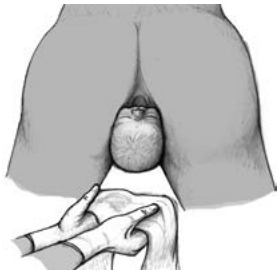


Figure 3.3



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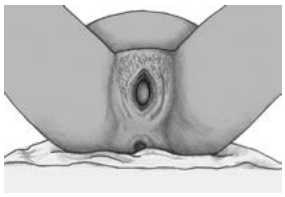

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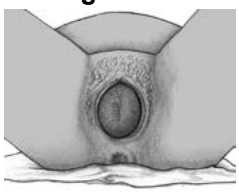

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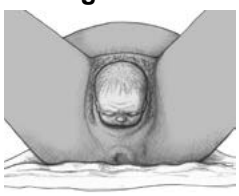


Figure 3.7

Do

- Put clean sheet under woman
- Use small combines to clean any 'show' or faeces from perineum — wipe from front to back
- Open and set up birthing pack
  - Put on goggles and sterile gloves
- Talk calmly — say things like "you are getting this baby out so well" , "everything's stretching nicely", "that's great, let the baby out slowly"

Birth of baby's head and shoulders

- Let birth of head happen slowly on its own
  - On all fours — Figure 3.2, Figure 3.3, Figure 3.4
  - *OR* on back — Figure 3.5, Figure 3.6, Figure 3.7
- Let woman push as she feels like it
- When perineum stretched thin and labia wide apart (as head is being born) — ask woman to 'pant' or puff through contractions
  - Helps baby's head to be born as slowly as possible
  - May help protect perineum from tearing
- If membranes still intact and bulging — pop with gloved finger
- **Wait for next contraction** — will take about 1 minute

- As contraction starts baby's head usually turns to face woman's inner thigh — Figure 3.8, Figure 3.9
- As woman pushes with contraction shoulders should deliver
- Shoulder under pubic bone comes out first

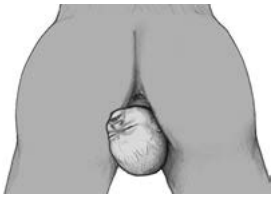


Figure 3.8

If shoulder doesn't come out easily

Follow instructions for woman birthing on all fours or on back

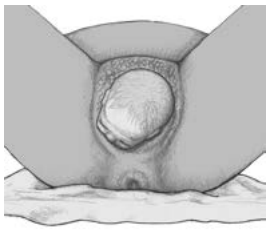


Figure 3.9

- If woman birthing on **all fours**
  - Wait for next contraction *THEN* holding baby's head between palms of your hands gently lift up toward ceiling to release anterior (front) shoulder — Figure 3.10
  - When shoulder comes out from under pubic bone — ask woman to stop pushing
  - Gently guide baby downward toward bed/floor — Figure 3.11

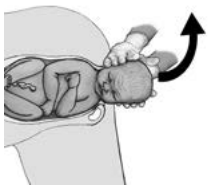


Figure 3.10

- If woman birthing **on her back**
  - Wait for next contraction *THEN* holding baby's head between palms of your hands gently pull down toward bed to release anterior (front) shoulder — Figure 3.12
  - When shoulder comes out from under pubic bone — ask woman to stop pushing
  - Gently lift baby upward toward ceiling — Figure 3.13 Other shoulder should now appear

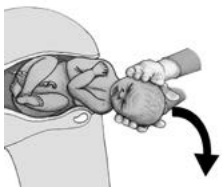


Figure 3.11

If shoulders still stuck — see Shoulder dystocia straight away (page 67)**. This is an emergency**

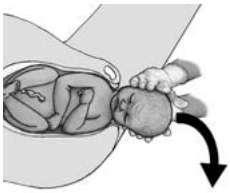


Figure 3.12

Birth of body

- Support head and shoulders while waiting for rest of body to slip out — may happen straight away or not until next contraction
- Support baby as it births — it will be slippery, so use gentle but firm grip. Can use warm towel

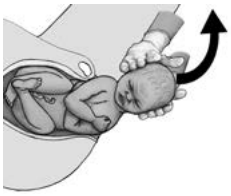


Figure 3.13

After the birth

- Make sure there is only 1 baby by feeling woman's uterus — top of uterus should be no higher than umbilicus
  - If there is another baby — **do not** give oxytocin. See Twin birth (page 70)
- Give **oxytocin** IM — 10 international units in thigh
  - Watch for signs that placenta has separated from wall of uterus — trickle or gush of blood from vagina and lengthening of cord. Placenta should separate within a few minutes
  - If oxytocin is not used separation may take longer and there is an increased risk of postpartum haemorrhage (bleeding after birth)
- Note time of birth

Immediate care of baby

- Put baby skin-to-skin on mother's chest/abdomen
  - If mother doesn't want baby on her — put baby between her legs, away from blood and mess
- Dry baby very well and remove wet towel. Cover baby with warm dry towel making sure head is covered
- Do 'rapid assessment' of baby's condition
  - Breathing or crying
  - Muscle tone
  - Heart rate
- **If baby floppy and/or not breathing properly and/or heart rate less than 100 bpm — see Newborn resuscitation straight away** (page 7)
- If baby breathing, good muscle tone, heart rate more than 100 bpm — leave in skin-to-skin contact with mother if possible
  - *OR* if baby needs extra care — give to helper, see Risk factors for babies needing special care (page 199)
  - *OR* if mother tired or unwell — give baby to family member
- At 1 minute (after the birth) — check heart rate, RR, tone, response to stimulation, colour

Have helper

- Keep baby warm — see Keeping baby warm after birth (page 203)
- Watch baby closely over next few minutes for signs of respiratory distress
- Encourage early breastfeeding — helps placenta separate from uterus and uterus to contract after placenta delivered
- For ongoing care — see Newborn care (page 199)

Clamp and cut cord

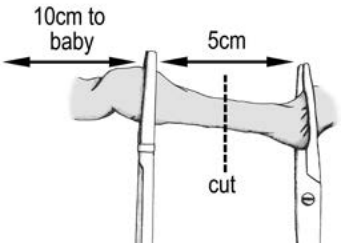


Figure 3.14

- Some cultures like long cord left on baby — ask mother or support person
- Wait at least 1 minute and until cord stops pulsating if possible
- Put 2 metal clamps on cord 5cm apart, at least 10cm from baby's abdomen — Figure 3.14
- Cut cord between 2 clamps with sterile blunt-end scissors
  - Do not take clamps off after cutting

Taking cord blood

Very important if woman RhD negative or blood group not known

- If taking before placenta delivered
  - Unclamp metal cord clamp on placenta side
  - Let blood flow into clean kidney dish
  - Re-clamp
  - Use syringe to draw up 10ml of cord blood. Put into EDTA or plain specimen tube and label 'cord blood'
- If taking after placenta delivered
  - Draw 10ml of blood from one placenta blood vessel with needle and syringe. Put into EDTA or plain specimen tube and label 'cord blood'

Third stage of labour

From birth of baby until placenta delivered

If twins — only deliver placenta/s after birth of second baby

- Watch blood loss closely — collect clots in kidney dish to measure later
  - Normal loss is less than 500ml but this can seem like a lot of blood
  - 1 soaked pad holds about 100ml
- Deliver placenta
  - If oxytocin given — see Delivering placenta with controlled cord traction
  - If oxytocin not given — see Delivering placenta by maternal effort
- Check for tears of birth canal (page 193)

Delivering placenta with controlled cord traction

If traction applied to cord without uterus contracted — increased risk of uterine inversion

Do not

- Do not do controlled cord traction if no oxytocin available or woman refuses it — see Delivering placenta by maternal effort

Do

- Woman lying or half sitting on bed, with kidney dish between her legs
- Check if oxytocin given — IM — 10 international units into thigh
- Clamp and cut cord if not already done
- **Wait 5–10 minutes for signs that placenta has separated from wall of uterus and descended** — trickle or gush of blood from vagina, lengthening of cord
- Clamp cord close to entrance of the vagina. Put fingers around clamp — Figure 3.15 or wrap cord around hand
- Put other hand above pubic bone with palm facing away from you. Use arch formed between thumb and first finger to apply counter traction. Push in and up to support uterus and hold it in place — Figure 3.15
  - If cord goes back in when you push on uterus — placenta hasn't separated properly. Wait a few minutes before trying again

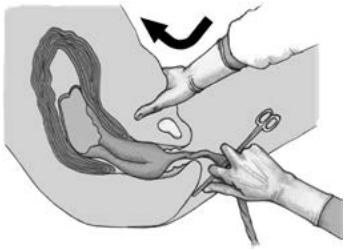


Figure 3.15

- Apply **gentle** traction (pull) on cord — down toward bed
  - **Do not** apply cord traction without applying counter traction — Figure 3.15
  - **Do not** apply cord traction unless uterus well contracted
- **Stop traction (pulling) and medical consult** if any suggestion of cord tearing *OR* uterus relaxes — increased risk of uterine inversion
- If no lengthening of cord
  - Wait a few minutes for placenta to separate then try again
- If you feel movement — keep applying gentle traction (pull) to cord until you see placenta at vaginal opening
- Hold placenta with both hands and slowly turn in one direction to peel membranes off wall of uterus
  - Keep turning slowly, while maintaining gentle traction, until whole placenta and membranes are out
  - Put placenta in kidney dish

- Straight after placenta is delivered — check fundus (top of uterus) — usually found at level of umbilicus. Should be firm like a grapefruit
  - If soft — see Rubbing up a contraction (page 187)
- Check how much bleeding
  - If bleeding — see Primary postpartum haemorrhage (page 77)
- Check placenta quickly to see if there are any pieces missing. Put aside to check (page 188) again later
- Record time placenta delivered

If placenta not delivered

- If placenta not delivered after following these steps — **medical consult**
- If placenta still not delivered 30 minutes after birth — see Retained placenta (page 188)

Delivering placenta by maternal effort

If no oxytocin available or woman refuses to have injection — do nothing and let placenta be delivered by mother's effort only

Do not

- Do not pull on cord at any stage — may cause more bleeding

Do

- Watch for signs that placenta has separated from wall of uterus — trickle or gush of blood from vagina and lengthening of cord
- Woman may feel a contraction or heaviness in pelvis. Usually has urge to push as placenta separates and drops down into lower part of uterus
  - Encourage woman to push when she gets the urge
  - May be easier in standing/squatting position or sitting on toilet/pan where gravity will help
- As placenta delivers — collect in kidney dish
- Straight after placenta delivered — check fundus (top of uterus) — usually found at level of umbilicus. Should be firm like a grapefruit
  - If soft — see Rubbing up a contraction
- Check how much woman is bleeding
  - If bleeding — see Primary postpartum haemorrhage (page 77)
- Record time placenta delivered
  - Check placenta quickly to see if there are any pieces missing. Put aside to check (page 188) again later
- If placenta not delivered 30 minutes after birth — **medical consult** and treat as retained placenta (page 74)
- Encourage breastfeeding as soon as possible after birth — releases oxytocin (natural hormone) that causes the uterus to contract

Fourth stage of labour

First hour after birth of placenta

- Check that blood and swabs for all other routine tests have been collected
- STI check
  - Syphilis serology
  - If STI status not known — do pregnancy STI check (page 250)
- If mother comfortable — put baby on her chest, encourage skin-to-skin contact and breastfeeding (page 232). Offer help if needed
- Offer woman something to eat and drink, shower and change of clothes
- Encourage woman to pass urine - full bladder can stop uterus contracting and cause heavy bleeding
- Make sure placenta checked (page 188) and is complete
- **Medical consult**
- Make sure you know mother's medical and obstetric history. Talk about
  - Labour, birth, condition of mother and baby
  - Problems with woman, baby, placenta
- If needing to send to hospital — send placenta, birth documents, bloods, birth registration and family assistance forms with woman

Record in file notes

- Date and time of birth of baby
- Time of birth of placenta
- How much blood woman lost — 1 soaked pad is equal to about 100ml
- What you did, any problems you had, etc
- Any medicines, immunisations given to mother and/or baby
- Whether placenta and membranes complete or incomplete

Follow-up

- Complete birth registration forms and see — Care of mother — first 24 hours after the birth (page 190)
- Don't forget to celebrate and debrief
  - If challenged or distressed by anything you saw or did — talk with friends, colleagues and/or qualified counsellor, eg Bush Support Services on 1800 805 391

Rubbing up a contraction

Using hands to stimulate uterine muscles to contract after delivery of placenta

- Relaxed uterus will bleed heavily
- Only rub up a contraction if woman starts to bleed from relaxed uterus after delivery of placenta

Do

- Gently feel fundus (top of uterus) after delivery of placenta and every 15 minutes for first hour — should be hard and size of a grapefruit
  - Warn woman that fundus (top of uterus) is very tender after birth but it is important to stop the bleeding
- Have baby breastfeed if possible — helps uterus contract
  - Important that baby feeds within first hour after birth
  - Most babies do this themselves if held close to the breast
- Encourage woman to empty bladder — full bladder stops uterus contracting
  - If unable to pass urine and blood loss heavy — put in indwelling urinary catheter (page 327)
- Using one hand, firmly rub fundus (top of uterus) — encourage deep breathing. Woman can use nitrous oxide for pain relief, if available
- Keep doing this until uterus becomes firm
- If uterus stays relaxed (feels spongy and bulky)
  - **Urgent medical consult** — See Primary postpartum haemorrhage (page 77) — woman may keep trickling or gushing blood

Checking the placenta

- Placenta and membranes need to be checked after the birth to make sure they are complete
- If pieces of placenta or membranes left inside the uterus can't contract completely — can cause postpartum haemorrhage (significant bleeding)

Do not

- **Do not** dispose of placenta until you have asked family for advice, if not sending to hospital/pathology
  - Placenta may have cultural or personal significance and family may want to take it home

Do first

- If woman going to hospital — send placenta with her
  - Double bag then put in pathology transport container with ice brick
  - Make sure it is labelled

Check

- If woman less than 37 weeks pregnant or showing signs of infection — eg fever or pus/discharge on membranes, offensive odour from placenta
  - Take swabs from both foetal (outside) and maternal (inside) sides of membranes and send for MC&S
  - Send placenta to pathology, even if woman not going to hospital
  - Make sure pathology test form is sent with the placenta — medical consult to find out what tests to order
- If abnormalities in the placenta, or complications in the pregnancy — **medical consult** — placenta may need to be sent for histopathology

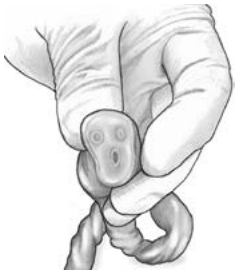


Figure 3.16

Look at cut cord

- Usually 3 blood vessels — Figure 3.16
  - If only 2 blood vessels — **medical consult for baby** — may be associated with kidney, heart or other abnormalities

Look at placenta — foetal (cord) side up

- Put placenta on table with foetal (cord) side up — should be smooth and shiny — Figure 3.17

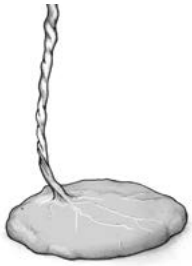


Figure 3.17

- Hold placenta up by cord and check membranes are intact — Figure 3.18
- There are 2 layers of membranes
  - Amnion (membrane on foetal side) is easy to tear
  - Chorion (membrane on maternal side) is a bit tougher and thicker
- If any holes, tears, ragged edges or missing membrane — Figure 3.19 — **medical consult**

Look at placenta — maternal side up

- Lay placenta flat on table with maternal side up — check it is complete
  - If any pieces of placenta missing — Figure 3.20 — **medical consult**

Figure 3.18

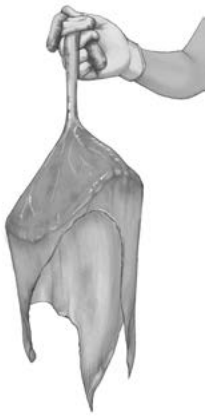


Figure 3.19

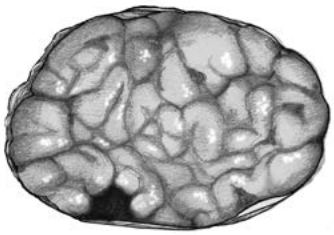


Figure 3.20

Care of mother — first 24 hours after birth

- **Always call for help — get midwife/doctor/obstetrician** on speaker phone, if none locally
- Find support people — if possible female ATSIHP or older women familiar with birthing
- Reassure woman and explain what is happening. Have someone stay with her for support

Red Flags — Urgent Medical Consult

- Heavy vaginal bleeding (total blood loss 500mL or more at any time) — 1 soaked pad is equal to about 100mL
- Signs of shock

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- **Signs of shock**
  - Increased RR
  - Pulse weak and fast (more than 100bpm) or difficult to feel
  - Central capillary refill longer than 2 seconds
  - Pale, cool, moist skin
  - Restless, confused, drowsy, occasionally unconscious
  - Low BP for age or relative to person's previously recorded values

Do — in first hour

After birth of placenta

- Check STI status
  - Syphilis serology
  - If STI status not known — do Pregnancy STI check (page 251)
- Check that blood and swabs for all other routine tests have been collected
- Record in file notes
  - Date and time of birth
  - Time of delivery of placenta
  - How much blood woman lost — 1 soaked pad is equal to about 100mL
  - What you did, any problems you had, etc
  - Any medicines, immunisations given to mother and/or baby
  - Whether placenta and membranes are complete or incomplete
- Complete birth registration forms

- If mother comfortable — put baby on her chest, encourage skin-to-skin contact and breastfeeding (page 232). Offer help if needed
- Encourage woman to pass urine — full bladder can stop uterus contracting and cause heavy bleeding
- Offer woman something to eat and drink, shower and change of clothes
- Make sure placenta checked (page 188) and is complete
- Don't forget to celebrate and debrief
  - If challenged or distressed by anything you saw or did talk with friends, colleagues and/or qualified counsellor, eg Bush Support Services on 1800 805 391
- **Medical consult**
  - Refer to mother's medical and obstetric history
- Talk about
  - Labour, birth, condition of mother and baby *AND*
  - Problems with woman, baby or placenta
  - If needing to send to hospital — send placenta, birth documents, bloods, birth registration and family assistance forms with woman

Do

Blood tests

- If no antenatal care — **medical consult**
  - Bloods as for first antenatal visit including FBC (best done 24 hours after birth), syphilis serology — see Antenatal checklist (page 105)
- If woman RhD negative or blood group unknown — **medical consult**
  - May need to transfer to hospital for cord blood processing and RhD-Ig within 72 hours
  - Take blood for Kleihauer to determine amount of foetal blood in maternal circulation — within 2 hours of birth and before giving RhD-Ig

Talk with woman about

- Emptying bladder regularly to lessen risk of heavy bleeding
- How to feel top of her uterus and how to massage it to make it hard if she has heavy bleeding
- **If heavy bleeding (needing to change pad more than every few hours) — tell clinic staff as soon as possible — this is an emergency**
- Perineal hygiene and healing — changing pads often and shower at least once, preferably several times a day
  - If perineal tear — call maternity service
- 'After birth' pains — crampy uterine pains, often worse when breastfeeding — see Pain management (STM, page 326) if needed
- Symptoms of thromboembolism (clots) — DVT or PE (page 165)

- Breastfeeding (page 232)
- Arrangements for follow-up/ongoing care including contraception — see Postnatal care of mother (page 211)

Before leaving clinic

- Encourage woman to move about to help prevent blood clots in her legs
- If woman staying in community
  - Mother and baby should rest in clinic for at least 4 hours or as long as needed after birth
  - Make sure woman has passed urine before leaving clinic
  - Make sure woman has someone staying with her to help look after baby
- Fill in forms for birth registration, perinatal statistics and family assistance
  - Remind woman to attend Centrelink and have 100 points of identification ready

Tears of the birth canal

- Can be tear of perineum, vagina, vulva or cervix
- Common after birth — always check carefully for tears, especially if heavy blood loss
- Tears more likely to happen if quick birth or large baby
- **If bright blood loss, placenta delivered and uterus is firm and well contracted**
  - Look at vaginal area for tear
  - If heavy bleeding but can't see bleeding tear — suspect cervical tear

Red Flags — Urgent Medical Consult

- Heavy bleeding more than 500ml at any time (1 soaked pad is equal to about 100ml)

Types of tears

Table 3.2

Classification	Type of damage	Repair needed
Graze or 1st degree tear — Figure 3.21	Tear involves skin and subcutaneous tissue of perineum and vaginal epithelium only	Usually doesn't need repair Apply pressure to stop bleeding
2nd degree tear — Figure 3.22	Tear extends into fascia and muscle of perineum but anal sphincter remains intact	Should be repaired — can be done in community, if trained
3rd degree tear — Figure 3.23	Tear extends into anal sphincter	Needs to be repaired in hospital by specialist
4th degree tear — Figure 3.24	Tear extends beyond anal sphincter to involve rectal mucosa	Needs to be repaired in hospital by specialist
Episiotomy	• Cut made through perineum and posterior vaginal wall • Can extend into complex 2nd degree tear or even a 3rd or 4th degree tear	Simple episiotomy can be repaired in community, if trained
Anterior genital tear	Peri-urethral, labial or clitoral tears	May need repair if bleeding or large — **specialist consult**
Cervical tear	Tear involving the cervix	If bleeding, needs repair in hospital by specialist

Do not

Do not suture tear or episiotomy unless trained

Check

- Woman often very sore and embarrassed about this examination — be gentle, careful, sensitive and reassure woman
- Offer **nitrous oxide**, if available — for pain relief and to help her relax
- Position woman lying down with bottom at edge of bed, knees bent up and feet supported
- Use good light — positioned properly
- Put on sterile gloves
- Mop up blood in vagina entrance with sterile gauze swabs
- Check perineum, vulva, urethra, labia and clitoris
  - Separate labia and look at vaginal opening
  - Wrap sterile gauze around fingers and use to **gently** separate the walls of vagina
  - If tear/bleeding high up in vagina or hard to see — may need sterile speculum exam
- Check for 3rd or 4th degree tear
  - Put gloved index finger into rectum and feel for anal sphincter between thumb on outside and finger on inside — should feel circular ridge of muscle around anus
  - Check for small fibres that may indicate partial 3rd degree tear
  - Change gloves after rectal exam
- Follow each tear to end to see where it stops

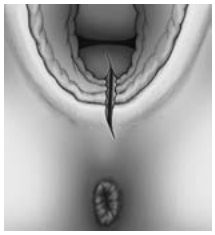


Figure 3.21

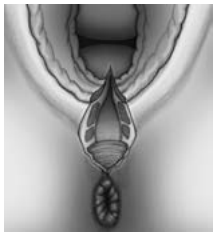


Figure 3.22

Figure 3.23

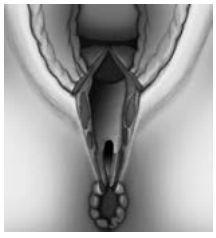


Figure 3.24

Do

- Repairing tear properly will control bleeding — **start as soon as possible**

Table 3.3

Type of tear	Treatment
Superficial graze *OR* 1st degree tear — not bleeding	• Don't need to be sutured • If stinging when passing urine — advise to drink plenty of water and use urinary alkalinizer
1st degree tear — bleeding	• Apply pressure with sterile pad for 5–10 minutes or until bleeding stops • Add ice pack into combine pad
2nd degree tear	• Suture unless woman refuses — see Repairing tear or episiotomy • If not confident about doing repair — control bleeding *AND* **medical consult** to send to hospital
3rd or 4th degree tear	• **Medical consult** to send to hospital for repair by specialist • If being sent to hospital — ice pack to perineum for pain relief and to ease swelling and bleeding — 20 minutes on, 20 minutes off • Do not put ice pack directly on skin

If tear bleeding

- Apply pressure with sterile pad for 5–10 minutes
  - If bleeding continues — ask helper to apply pressure
  - Recheck for bleeding after another 10 minutes pressure
  - If still bleeding — **medical consult** — may suggest putting in large stitches at bleeding point, clamping bleeding point and/or packing vagina — record what and how much/many used
- Keep applying pressure for as long as needed — weigh pads to work out blood loss — 1g increase = 1ml loss
  - If bleeding still continues — put in IV cannula, largest possible *AND* start **normal saline** 1L at 125mL/hr
- **Medical consult** — are antibiotics needed
- If woman unable to pass urine — put in indwelling urinary catheter (page 327)
- Reassure woman and family
- Encourage woman to hold and breastfeed baby, unless feeling very unwell
- Do routine observations including checking uterus is firmly contracted — every 30 minutes until evacuation

Repairing tear or episiotomy

Only do if skilled — but repair should be done as soon as possible to reduce risk of blood loss and infection

Do not

If anal sphincter or rectum torn — **do not** attempt repair

If you can't do repair

- Treat tear/episiotomy as open wound waiting to be sutured *AND* **medical consult**
- It is most important to stop/control bleeding
  - Apply pressure with pad
  - Ask woman to keep legs together to hold pad in place
  - Check blood loss often and reinforce pads as needed

What you need

- Portable light
- Protective apron, glasses and face shield
- Sterile gloves × 2 — double glove
- Chlorhexidine aqueous solution
- 10–20mL lidocaine (lignocaine) 1%
- Syringe and needles for infiltration
- Sterile dressing pack
- Sterile combine (small)
- Sterile gauze swabs (preferably radiopaque) × 3 packets
- Sterile suture pack with needle holders, scissors and toothed forceps
- Sterile artery forceps (fine)
- 30–40mm half-circle or tapered needle
- 2.0 or 3.0 absorbable synthetic suture (eg *Vicryl*, *Vicryl Rapide*, *Dexon*)
- Water-based lubricant for rectal exam
- Sterile towels/drape
- Ice pack
- Combine or pad

What you do

- Allow woman's support person to be present and explain clearly the importance of assessment and repair
- Allow for baby to stay with the mum if appropriate
- Position woman so she is comfortable and you can see tear clearly — good lighting is essential

- Wash hands and put on sterile gloves — double glove — repairing tear or episiotomy is an aseptic technique
- Lay out dressing pack and equipment
  - Count gauze squares, packs, needles — record count in file notes
- Put on apron, glasses and face shield
- Gently examine vaginal/perineal tear
- Clean site with **chlorhexidine solution**
- Drape site with sterile towels/drape
- If LA given to do episiotomy — make sure area is still anaesthetised before doing repair
  - Give more if needed — **lidocaine (lignocaine)** — 10mL usually enough, but can use up to 3mg/kg up to 200mg (20mL) in total over 1 hour
- Wait a few minutes *THEN* check area is anaesthetised properly before beginning repair
- Check wound again. **If tear too big for you to repair — stop now**
  - Control bleeding
  - **Medical consult** to send to hospital — consider indwelling urinary catheter for evacuation
- May need to put in vaginal pack/combine to enable good visibility while suturing — record in file notes. **Do not** forget to remove it
- Start by repairing vagina first — find apex of tear and put first suture 3-5mm behind it — Figure 3.25
- **Do not** pull stitches too tight as area can swell and cause a lot of pain
  - In vagina — use continuous non-locking stitch — Figure 3.26
  - In muscle layer — use interrupted or continuous non-locking stitch — Figure 3.27
  - In skin of perineum — use continuous subcuticular stitch — Figure 3.28

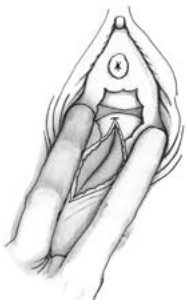


Figure 3.25

Figure 3.26

Figure 3.27

Figure 3.28

- **If vaginal pack/combine used while suturing — take out**
- Inspect repaired vagina to make sure bleeding has stopped
- Remove top pair of gloves *THEN* apply water-based lubricant
- Do digital rectal exam to check
  - Sutures haven't gone through rectal mucosa. If they have — take down and remove the stitch
  - No openings between vagina and rectum
  - Sphincter feels intact
- Count gauze squares, packs and needles again — make sure count is correct and record number in file notes
- Use ice pack, inside pad, to help decrease pain and swelling
- Give pain relief (STM, page 326), if needed

Follow-up

- Talk with woman about
  - Personal hygiene
  - Resumption of sexual intercourse
  - Diet and fluids
- Provide coloxyl to stop straining when using bowels

Newborn care

Red Flags — Urgent Medical Consult

- Baby looks unwell

Risk factors for babies needing special care

Table 3.4 Risk factors for babies needing special care

Mother's history	Labour and birth	Newborn period
• Little or no antenatal care — less than 4 visits • Diabetes • Alcohol or other substance use • GBS positive • Current STI • High BP	• Mother needing help with birth • Baby needing **any** resuscitation at birth • Maternal fever in labour • Meconium-stained liquor (green or brown amniotic fluid)	• Weight less than 2.5kg or more than 4.5kg • Preterm — less than 37 weeks gestation • Congenital abnormality • Abnormal observations — respiratory distress, low BGL, temperature instability • Neurological — seizure, poor tone

Serious problems for these babies include

- Hypothermia (baby gets cold easily)
- Respiratory distress (difficulty or increased work of breathing)
- Hypoglycaemia (low blood glucose)

Normal observations for newborn baby

Table 3.5 Normal observations for newborn baby

Temp	**36.5-37.5°C axilla**
Heart Rate	110-160 bpm
Respiratory Rate	30-60 bpm No grunting, nasal flaring or chest in-drawing
O_2 sats	Can take 10 minutes to reach 90% or more in room air post birth. Then 95% or greater
BGL	More than 2.6mmol/L
Colour	Lips and tongue pink — *NOT* pale or blue
Movement	Active when awake, moving all limbs with good tone — *NOT* floppy or stiff
Feeding	Latches to breastfeed. No vomit

Immediate care after birth

Do first

- Leave baby skin-to-skin on mother's chest/abdomen for as long as possible — encourage early breastfeeding (page 232)
  - If not skin-to-skin — wrap baby warmly *AND* put beanie on head — see Keeping baby warm after birth (page 203)
- Do not rush to weigh baby — wait until after first breastfeed

Feeding guidelines

- **Do not** breastfeed at this time **medical consult** about other forms of nutrition if baby
  - Is sick
  - Less than 35 weeks gestation
  - Is very small — less than 1.8kg
  - Has respiratory distress or needing oxygen
  - Needed 'full' ABC resuscitation at birth
  - Mother HIV positive
- Encourage breastfeeding if
  - More than 35 weeks gestation
  - Normal RR
  - Alert and active

Check

- Axillary Temp (under arm) every 15 minutes — **never rectally**
- Check tone, colour and response to stimulation
- Heart rate and O_2 sats
  - Use pulse oximeter with infant probe — put on **right hand** or wrist — hands or feet may be too cold for good reading
  - If no oximeter — check baby's heart rate with stethoscope and watch baby's colour — look at mouth, lips, mucous membranes
- Record heart rate, RR, respiratory effort, O_2 sats, every 5 minutes for 30 minutes *THEN* every 15 minutes
  - If any of signs of respiratory distress *OR* looks centrally cyanosed (mouth, lips, mucous membranes pale or blue) — apply oxygen **straight away** — see Do — if respiratory distress
- BGL using heel-prick blood
  - If BGL less than 2.6mmol/L — treat hypoglycaemia (low blood sugar) **straight away** — see Do — if hypoglycaemia
- If umbilicus bleeding — check clamp is on properly

Do

- Trim cord if necessary
  - Clamp remaining cord with plastic cord clamp 4–5cm from abdomen — Figure 3.29
  - Make sure it is snapped shut
  - Remove metal cord clamp put on after birth
  - Trim cord 1–2cm above plastic clamp — Figure 3.29 or at length requested by mother or support person

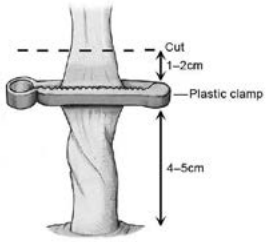


Figure 3.29

Do — if respiratory distress (breathing problems)

- Give **oxygen** until target O_2 sats met — Table 3.6 if
  - Working hard to breathe (using accessory muscles, nasal flaring)
  - RR less than 35 or more than 60 breaths/min
  - Apnoea (stops breathing for more than 15 seconds)
- If O_2 sats reaches target — gradually reduce amount of oxygen
- If O_2 sats falls below target — **specialist consult**
- If apnoea (breathing irregular with long pauses) — stimulate baby to breathe by rubbing gently — **do not** undress baby
  - If this doesn't work or baby too weak or too tired to keep breathing — see Newborn resuscitation flowchart **straight away**

Table 3.6 Target oxygen saturations for newborn

Time from birth (minutes)	O_2 sats (%)
1	60–70
2	65–85
3	70–90
4	75–90
5	80–90
10	85–90

Do — if hypoglycaemia (low blood glucose) — BGL less than 2.6mmol/L

If at risk but well — safe to breastfeed — see Feeding guidelines

- Encourage baby to breastfeed or give hand expressed colostrum/breast milk
- Repeat BGL in 30 minutes
  - If still less than 2.6mmol/L — **medical consult**
  - Consider giving expressed breast milk or infant formula
  - Consider **glucose gel** — 0.5ml/kg (15g glucose in 37.5g oral gel)

If unwell — not safe to breastfeed — see Feeding guidelines

- Do not breast or bottle-feed due to risk of aspiration
- **Medical consult** — doctor should talk to paediatrician
  - If doctor not available within 30 minutes — clinic staff to contact paediatrician
- Put **glucose gel** on inside of cheek (buccal mucosa) — 0.5mL/kg (15g glucose in 37.5g oral gel)
- Repeat BGL in 30 minutes. If still less than 2.6mmol/L — **medical consult** again
  - Continue giving **glucose gel**
  - If BGL remains less than 1 or baby has fit — consider **glucagon** IM — 100–300microgram/kg

Ongoing care

- If mother positive for hepatitis B (HbsAg), hepatitis C or HIV and baby more than 32 weeks gestation — before giving injections, wash injection site with warm water, dry thoroughly (keep warm)
- Give **vitamin K** IM
  - 1mg (0.1ml) for baby weighing 1.5kg or more
  - 0.5mg (0.05ml) for baby weighing less than 1.5kg
- Give Hepatitis B immunisation birth dose
- Check baby has name bands on wrist and ankle
- If stable — measure weight, length and head circumference
- Record if baby passes urine or meconium
- If mother has history of substance misuse — watch for symptoms of withdrawal in baby
- Fill in birth registration forms

If mother and baby stay in community

- Encourage mother to breastfeed (page 232) baby on demand
- Talk with Public Health Unit about BCG vaccination
- Talk with mother about care of umbilicus
  - Clean with water and dry with towel or cloth
  - Keep nappy away from cord until it separates
  - If signs of infection or any problems — come to clinic **straight away**

Follow-up

- After 24 hours — see Postnatal care of baby (page 223)
- Review baby daily for first week

Keeping baby warm after birth

Normal newborn temperature is 36.5–37.5°C under arm

- Babies lose heat very quickly, eg from a cold room, air touching the baby's skin, lying on a cool surface or evaporation
- Cold will stress baby and may cause respiratory distress (breathing problems) or hypoglycaemia (low BGL). Also makes resuscitation more difficult

Red Flags — Urgent Medical Consult

- Temperature below 36.5°C in newborn baby

Risk factors for low temperatures

If any risk factors present — see Newborn care (page 199)

- Low birth weight
- Preterm
- Sick, especially breathing problems
- Resuscitated straight after birth
- Mother with diabetes
- Born before arriving at clinic and has become cold

Do not

- **Do not** use hot water bottle
- **Do not** overheat baby
- **Do not** bath baby until temperature normal — most don't need a bath

What you need

- **Warm room** for baby to arrive into — turn off air conditioner and put on heating just before birth
  - If can't turn off air conditioner and it is warm outside — open doors and windows
- Lots of clean, pre-warmed towels, sheets and blankets — warm by putting in sun, wrapping around hot water bottle or put near heater
- Bubble wrap, cling wrap
- Thick clear plastic bag — if baby thought to be preterm or low birth weight

What you do

- **Best way to warm baby is skin against mother's skin**
- **Keep baby's head covered** — most heat is lost from the head
- Cover back of baby with bunny rug, sheet or clothing

- **As soon as baby born** put onto mother's chest, skin-to-skin and dry thoroughly with warm dry towel — Figure 3.30
- Remove wet towel and put new warm one over baby's head and body, as baby lies on mother
- If mother not able to hold baby and baby is pink and breathing well
  - Ask helper/relative to put naked baby under their clothes, against skin on their chest (chest-to-chest). Add layers of bubble wrap/ towels around baby's body and cover head with hat or bunny rug
  - *OR* use clean, warm towel to wrap baby as snugly as possible, making sure head is fully covered to middle of brow — Figure 3.31 *THEN w*rap body (not head) again in bubble wrap/cling wrap and give to helper to hold and watch over
- After placenta delivered and mother comfortable — take baby's axillary temp (under arm).
  - Make sure skin dry and thermometer is snugly between folds of skin not clothing
- Wait until baby warm and settled with no signs of distress before weighing naked — have all equipment ready before unwrapping baby
- Keep skin-to-skin with mother for as long as possible
- **Encourage first breastfeed within first hour** — Figure 3.32 —baby will warm up faster after a good feed
  - If unable to breastfeed — help mother express (page 235) some colostrum and syringe/drop into baby's mouth

Figure 3.30

Figure 3.31

Figure 3.32

Babies thought to be preterm or low birth weight

- **Do not** dry baby
- Place immediately in thick clear plastic bag or plastic wrap
- *OR* alternatively if mother and baby well enough — place baby on mother's chest between breasts — Figure 3.30— cover both with plastic wrap then warm blanket
- Keep head out and body completely covered — cover head with small hat
- Continue to closely observe temperature, breathing and heart rate
  - Aim for normal temperature — 36.5–37.5°C under arm — avoid overheating

Stillbirth

Stillbirth — any baby 20 or more weeks gestation or weighs 400g or more who doesn't show any sign of life at birth such as breathing, heartbeat or movement

Miscarriage — pregnancy loss at less than 20 weeks gestation or weight less than 400g

- Stillbirth is a distressing and traumatic event for woman, family and health care providers
- Grief is an individual emotion and different cultures and language groups react in different ways
  - Women and family members may understand and react to stillbirth in different ways — some younger women may have different cultural values to older family members
  - Listen carefully, be guided by ATSIHPs, woman's relatives, woman herself

Considerations for health staff, woman and family

- Be guided by ATSIHPs and family members for language to use
  - 'Passed away', 'lost', 'gone', 'finished' may be better understood and less offensive than 'died'
- Always treat the mother, her family and the baby with compassion and respect
- Allow family to spend the time they need with the baby
  - Woman and family members may or may not want to see baby — always ask
  - If family want to see or hold baby — wrap in clean baby rug with face uncovered
- Family may name baby — check if you should refer to baby by name
  - Tell the woman and her family that every baby born beyond 20 weeks gestation must be registered as a birth and a death and must have a name
  - The birth registration form must be completed
- Consider continuation of clinical services and how this will be managed
  - It is appropriate for all mothers and babies to be transferred to a maternity unit for continuing care
- Burial or cremation must be arranged through a funeral director
  - Can have important cultural and spiritual significance
  - Relatives may want formal burial even if baby 'passed away' early in pregnancy
  - Woman may want baby buried in home community

- Family may believe death was caused by unacceptable behaviour of another person or a series of events — may direct anger or frustration at clinic staff
- Refer to midwife for continuing advice

Do

Medical consult about
- Stillbirth — for help following this protocol
- Medical complications that may need to be managed in hospital
- Antibiotics if signs of infection
- Other concerns

Care for mother

- Look after the woman as the priority — see Care of mother — first 24 hours after the birth (page 190)
- Tell woman about the importance of ongoing support and care in hospital — explain that careful management and follow-up is needed to help prevent problems in future pregnancies
  - Autopsy (operation to find cause of death) recommended for same reasons

If mother agrees to go to hospital
- **Medical consult** to send to hospital straight away
- Talk to senior midwife at receiving maternity unit
- Talk with retrieval team about options for transporting baby with mother
  - Baby must be identified with name band on each leg
  - Send placenta — very important for autopsy process

If mother refuses hospital transfer
- **Medical/obstetrician consult** and talk to local maternity service about continuing plan of care for mother and baby — see Postnatal care of mother (page 211)
- Talk later about suppressing lactation (page 237) (breastfeeding) — milk is usually produced within a few days of birth even if baby stillborn
  - Can use simple measures or take medicine to stop milk production. If mother requests medication — **medical consult**

Management of deceased baby

- Baby may be bathed if requested
- Always wrap the baby and consider dressing the baby
- Ask if family would like to take mementoes, eg photos, foot/hand prints, lock of hair

- When not with the family the baby should be placed in the mortuary — or kept cooled
- If woman doesn't go to hospital — talk with her about autopsy for baby
  - Autopsy strongly recommended — explain it may help find out why this baby died and help with future pregnancies

If mother consents to autopsy for baby

- Consult with local maternity service about forms, process and signing of consent
- Best if mother signs consent form
  - Complete consent form with as much information as possible — will help the pathologist. If situation complicated (eg by family disagreement) — **medical consult**
- Write letter/generate health summary which includes
  - Details of any previous pregnancies
  - Details about this pregnancy
  - Details about labour and birth, including birth weight and time of birth
  - Antibiotics or other medicines taken in pregnancy
  - Substance use — smoking, alcohol, petrol sniffing
- Ask for medical report and autopsy report to be sent to clinic

Transporting autopsy specimens

- Baby — put name bands on both legs, wrap baby in bluey then put in plastic bag
- Placenta — put in separate sealed plastic bag
- **Do not** use formalin or saline
- Transport in esky with 4 large ice bricks
  - Seal with sticky tape right around edge of lid
  - If being transported on aircraft (RFDS or other) — put sealed esky inside additional plastic bag and seal bag completely so no leakage
- Include baby's cord blood, consent form for autopsy, letter and pathology form
- Make sure all checks and documentation complete
- Liaise with the receiving service prior to transfer

If mother doesn't consent to autopsy for baby

- Check placenta (page 188) — completeness, texture, cord vessels, knot in cord
  - Photograph any abnormalities in the placenta and include in medical record
- Take cord blood — may be difficult
  - Collect blood from cord before it is clamped
  - *OR* perform venipuncture on 1 vessel of cord

- Carry out basic examination of baby — document findings clearly
  - Check for any obvious abnormalities
  - Record appearance and take photos if parents consent — may help paediatrician diagnose congenital anomalies
  - Document weight, length and head circumference
  - Calculate gestational age based on weight/length and growth chart

Documentation

- Labour/birth details
- Birth registration form
- Medical certificate of cause of perinatal death completed by doctor
- Perinatal statistics form — send to perinatal statistics unit
- If woman entitled to stillborn baby payments — contact Centrelink
  - Remind woman to attend Centrelink and have 100 points of identification ready

Follow-up

- See Postnatal care of mother (page 211)
- Look for signs of perinatal depression and anxiety (page 127) or severe grief response — refer if any concerns
- **Medical consult** about autopsy report and other results
- Arrange obstetrician review
  - Talk with woman about future risk. It is important to be seen early for antenatal care
  - Offer pre-pregnancy counselling (page 96)
- Give woman the opportunity to talk about what happened and offer referral to perinatal mental health service
- Talk with woman about available support and counselling services
  - Stillbirth and Neonatal Death Support (SANDS)
  - Pregnancy, Birth and Baby
  - If more support needed — refer woman to social worker
- Stillbirth or neonatal death can be distressing and traumatic for staff involved and feelings can persist
  - It is important to debrief after these events and support each other in this process
  - CRANA*plus* Bush Support Service — 1800 805 391

Supporting resources

- Perinatal Society of Australia and New Zealand clinical guidelines

4. Postnatal

Introduction — postnatal care

Traditional birth assistants and health staff can offer a range of postnatal care for mothers and babies, which may include traditional ceremonies, particularly on return to their community.

In traditional care, after the birth the woman or a birth assistant prepared warm ash or sand to pack onto her abdomen, between her legs, and at the base of her spine. The warmth relieved pain, helped stop bleeding, and reduced the smell of blood and the placenta (baby bag).

After the birth, the mother would take part in a smoking ceremony to give her energy and strengthen her body, provide protection for the mother and the baby, and give the baby a good start in life. Leaves of the mulga tree, emu bush (yellow and pink flowers), stringy bark, or other traditional plants native to a region, were used to make the smoke. In some places a shelter was built with the smoking fire inside. The woman sat over the smoking leaves near the fire to smoke her abdomen and breasts. Smoking the breasts was thought to help the flow of milk.

All parts of baby were held briefly in the smoke. The ceremony was used to invoke health and acceptable social behaviour in the child. For example, if you smoke the baby's mouth, the child will not swear later. Women may say that a child is aggressive because they were born in hospital and put into water, rather than being smoked and put in the earth.

Aboriginal women traditionally breastfed well into their baby's second or third year. The whole community was accustomed to seeing babies being breastfed. Girls and young women learned about breastfeeding by watching, and would often care for other women's babies. Mothers often fed each other's babies.

Postnatal care of mother

If woman has birthed in community — see Care of mother — first 24 hours after birth (page 190)
Related topic — see also Postnatal care of baby (page 199)

Red Flags — Urgent Medical Consult	High risk needing more frequent review and further assessment
• Heavy bleeding and/or clots at any time • Persistent bleeding up to 6 weeks • Offensive vaginal discharge • Abdominal pain • Calf swelling and/or pain • Significant mood changes	• Breast or nipple pain • Difficult birth • Domestic family violence • Mental health concerns

Schedule of visits

- Planned schedule of visits should consider individual woman's needs. See also — Postnatal care of baby (page 223)
- If difficult to see woman and baby as often as recommended, use any opportunity to assess wellbeing and provide care
- If worried woman or baby medically or socially 'at risk' — keep regular contact with mother and review baby more than once a week

Schedule

- First visit within first 24 hours of birth *THEN*
  - 2nd day following birth
  - 3rd day following birth
  - 4-7 days following birth
  - 7-10 days following birth
  - Weekly until 6 weeks following birth
  - 8 weeks following birth

First postnatal visit

- First visit should be completed as soon as possible after mother and baby return to community
- First visit will be long. Spend time getting to know woman explaining what needs to be done
- Review discharge paperwork and take detailed history and examination

Ask

- Does she have concerns
- How baby is going, how she is managing care of baby
- Is she eating, sleeping, walking around community
- Substance use (smoking, chewing tobacco, alcohol, other drugs)
- Breastfeeding, breast and/or nipple pain, other problems
- Urinary or bowel problems or incontinence (page 322)
- Vaginal bleeding or discharge — colour, amount, smell, changing pads often
  - Normally bright blood loss for 2-3 days then dark to pink. Gets less over 2 weeks. May have light bleeding for 4-6 weeks — should stop by 6 weeks
- Wounds — healing and pain
- Severe pain — abdominal, perineal, headache, neck or back, calves
- Social and emotional wellbeing — family supports, mood changes, symptoms of depression or anxiety (page 127)

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
  - If BGL abnormal — see Postpartum follow-up of medical conditions (page 216)
- U/A — if nitrates positive or symptoms of UTI — MC&S
- Immunisation status — give any due
- RhD-Ig given in hospital if woman RhD negative with no Anti-D antibodies and baby RhD positive — RhD-Ig usually given in hospital within 72 hours of birth (IM 625 international units)
- Head-to-toe exam — with attention to
  - Breasts, nipples — cracked or sore nipples, redness, inflammation, breast lumps or pain, issues with breastfeeding (page 238)
  - Abdominal exam — if caesarean section check wound for healing
  - Abdominal palpation — **do not** feel for uterus if caesarean section. Uterus should feel like a firm lump below umbilicus. If not there or tenderness — **midwife/medical consult**
  - Perineum — clean, not infected, healing if tear or episiotomy
  - Haemorrhoids (piles)
  - Legs — signs of blood clots (page 165). Check for heat, pain, swelling in calf muscles

If caesarean section

- Check abdominal wound daily until healed, sutures removed or absorbed
- Give adequate **pain relief** — see Pain management (acute) (STM, page 326)
- Encourage to move about as much as possible
- Advise to avoid lifting, strenuous activity
- Talk with woman about the birth, her feelings about having a caesarean section, impact on future pregnancies

Do

- POC Test – Hb. If Hb less than 110g/L — see Anaemia (weak blood) in adults (STM, page 348)
- **Medical consult** to follow-up medical problems in pregnancy (page 216) (eg high BP, diabetes, RHD, kidney disease)
- Give **iodine** oral — 150microgram, once a day. Can be in multivitamin designed for pregnancy and breastfeeding
  - If woman has thyroid condition — **medical consult**
- Help mother to complete forms — birth registration, family allowance, Medicare
  - Remind woman to attend Centrelink and have 100 points of identification ready

Treat common problems

- Mild lower abdominal pains — can last a few days, often happen when breast feeding. Give **paracetamol** oral — adult 1g, up to 4 times a day (qid)
- Constipation — advise exercise, high fibre diet and lots of fluids. Consider 'bulking agent' (eg *Metamucil*) or softener (eg *docusate*) laxative if not passed faeces for 3 days
- Haemorrhoids — make sure not constipated. Give **anorectal cream** or **suppository** but only for a few days
  - **Medical consult** about surgical referral if severe or does not get better
- Urine — may sting vulva, perineum, labia. Encourage drinking lots of water, lean forward to pass urine or pass urine in shower. Treat UTI and give **urinary alkalinizer**
- Mood — reassure feeling bit sad, teary for a few days after the birth is common
  - **Medical consult** if depressed, acting in strange way or still sad feelings more than 2 weeks after the birth
- Important to come to clinic for checks for herself and baby over next few weeks, especially if concerns

Discuss

- Planned schedule of care for mother and baby
- Feeding baby
  - Strongly encourage breastfeeding (page 232)
  - If not able to breastfeed — talk with midwife, lactation consultant
  - If choosing not to breastfeed — talk about formula feeding — see Postnatal nutrition for mother and baby (up to 6 months old) (page 228)
- Safe sleeping
  - Sleep baby on their back
  - **Do not** cover head and/or face
  - **Do not** smoke near baby
  - Use a firm, flat mattress and clean bedding
  - If co-sleeping, adults should not drink, smoke or take drugs and baby should be between the edge of mattress and carer
- Self-care
- Emotional changes after birth — birth experiences, adjustment to mothering, feelings toward baby, fatigue — see Perinatal depression and anxiety (page 127)
- Social circumstances and support, domestic or family violence (page 22)
- Diet — regular healthy meals and snacks, plenty of fluids — see Postnatal nutrition for mother and baby (up to 6 months old) (page 228)
- Exercise — leg exercises and walking to prevent blood clots (page 165)
- Pelvic floor exercises — help prevent urinary incontinence (page 322)
- Contraception (page 331) and baby-spacing, sexual health, sexual activity after birth

Follow-up visits

- Ask about red flag items
- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- Check any problems previously identified have resolved
- Check has and is taking prescribed medicines
- Discuss nutrition/feeding, exercise, sleeping, smoking, social and emotional wellbeing

6-8 week postnatal check

- Can be long. Spend time getting to know woman, explaining what needs to be done
- Take detailed history and examination as per first postnatal visit *AND*
  - Edinburgh Postnatal Depression Score (EPDS)
  - Full STI check (page 246) including syphilis serology
  - Any pathology needed and **medical consult** for Postpartum follow-up of medical conditions (page 216)
  - Cervical screening test if due
  - Contraception
  - Discuss nutrition/feeding, safe sleeping, self-care, wellbeing, exercise as per first visit

If caesarean section

- Check abdominal wound daily until healed
- Give adequate pain relief (STM, page 326)
- Encourage to move about as much as possible
- Check for complications of operation
  - Transient ileus (bowels not working)
  - UTI (STM, page 486) or chest infection (STM, page 432)
  - DVT (Blood clot) in leg
  - Wound infection
- Advise to avoid lifting, strenuous activity
- Talk with woman about the birth, her feelings about having a caesarean section, impact on future pregnancies
- Advise to come to clinic with baby for **medical follow up**

Postpartum follow-up of medical conditions

- Follow-up medical conditions as early as possible and at 6–8 week postnatal check

Red Flags — Urgent Medical Consult

- Shortness of breath
- Chest pain
- Fever, shivers
- Systolic BP 160mmHg or more
- Diastolic BP 100mmHg or more
- Fast heart rate — over 100 beats per minute
- Excessive lethargy

Do

- Check discharge letters for any changes to pre-existing conditions and for follow-up actions
- Update medical conditions list in electronic medical record
- Advise women with chronic medical conditions or risk factors for pregnancy induced problems, to plan future pregnancies carefully
- Talk about contraception and coming to clinic early when pregnant for antenatal and specialist medical care

Anaemia

- See — Anaemia (weak blood) in adults (STM, page 348)
- **Medical follow-up** if any
  - Anaemia during pregnancy
  - Hb less than 110g/L at first check after birth
  - Any other abnormal blood results
  - Postpartum haemorrhage (heavy vaginal bleeding during or after birth)
  - Caesarean section birth

Rheumatic heart disease

- **Medical consult** if any RHD or other cardiac condition at every visit
  - **Urgent medical consult** for specialist consultation and echocardiogram if any shortness of breath or worsening fatigue in women with RHD or at high risk of RHD (includes all Aboriginal and Torres Strait Islander women in rural/remote areas)
- Check woman is on regular recall
- Make sure prophylactic Bicillin L-A (benzathine benzylpencillin) injections are up-to-date. If not — administer
- Bicillin L-A, oral penicillin and erythromycin are safe while breastfeeding and should be continued
- Encourage breastfeeding and review safety of any other heart medications with breastfeeding
- See — Acute rheumatic fever (ARF) and rheumatic heart disease (RHD) (STM, page 342)

Hypertension (high BP) or preeclampsia

- High BP may have been pre-existing and continue postpartum
- High BP and preeclampsia/eclampsia can occur in the immediate postpartum period — see High BP in pregnancy (page 158)
- BP usually stabilises in the first 2 months post pregnancy
- Medicine to manage high BP may need the type or dose changed, or slow withdrawal

Medical consult

- If continuing or worsening high BP (over 140/90mmHg or over 130/90mmHg if diabetes and protein in urine)
- Any other abnormalities (eg proteinuria, headaches, abdominal pain)
- Early in postnatal period if
  - Recurrent preeclampsia — had it in previous pregnancies
  - High BP was detected before 20 weeks gestation
  - Had kidney, liver, neurological or haematological abnormalities during pregnancy

Follow-up

- See woman every week for 6 weeks, then at 6-8 week postnatal check — needs **medical consult**
  - Check BP, weight, U/A for protein
- Review 3 months after birth. Check BP, weight, U/A for protein
  - If BP still high — manage as chronic high BP (page 161)
  - If U/A still shows protein (1+ or more) — investigate cause

Sexually Transmitted Infections (STIs)

Gonorrhoea, chlamydia, trichomonas

If positive tests for gonorrhoea, chlamydia or trichomonas in pregnancy

- Check if treatment given. Special considerations, trichomonas (page 260) may not have been treated in pregnancy
- Check that contact tracing done and partner/s treated
- If mother not treated during pregnancy
  - Baby needs **medical consult**
  - Develop treatment plan for mother and contacts

Syphilis

Active syphilis should be promptly treated during pregnancy. It can cause significant pregnancy complications and congenital syphilis in baby

- Check results of syphilis (page 258) tests taken during pregnancy or at birth
  - If unsure whether treated — talk with sexual health unit
- If mother has positive syphilis serology — check baby's risk of congenital syphilis was assessed
- If baby was not born in hospital — always do **urgent medical/ sexual health consult** about baby's risk and any treatment plan

Diabetes

- Any diabetes in pregnancy needs careful follow-up after birth
- Document maternal diabetes in pregnancy in the baby's medical record as it is a risk factor for future obesity and diabetes, and other adult conditions

Pre-existing diabetes

- See — Diabetes (STM, page 246) for general advice on management
- **Medical consult** and refer to diabetes educator
- Monitor BGL regularly and adjust treatment accordingly — Table 4.1 (page 220)
- Less medication is usually needed after birth to maintain target blood glucose levels (BGLs)
- If woman did not birth in hospital, **medical consult** — for advice from endocrinology regarding diabetes medications

- Encourage breastfeeding
  - Breastfeeding is beneficial for both mother and baby
  - Women with pre-existing diabetes are less likely to breastfeed than women without diabetes. Offer support and consider referral to lactation consultant if needed
  - Only use metformin and/or insulin if breastfeeding — **Do not use** other glucose-lowering medicines
- Women using insulin may be at risk of hypoglycaemia (low BGL) especially when breastfeeding — see Hypoglycaemia (low blood glucose) (STM, page 118)]
- Ensure routine diabetes (STM, page 246) follow-up is in place. If BGL's are not within the target range, consider more frequent review (eg every 1-2 weeks) initially
- Repeat HbA1c after 4 months — inaccurate earlier

Gestational diabetes

- See Table 4.1 for postpartum management and BGL monitoring
- All women with GDM, who are able to stop treatment postpartum, should be screened for pre-existing diabetes using
  - Fasting 75g OGTT at 6-8 weeks postpartum
  - If OGTT not possible, do HbA1c at 4 months postpartum — inaccurate earlier
  - See Diabetes (STM, page 246) to interpret results
- If postpartum screening normal, note high risk of developing type 2 diabetes (more than 1 in 5 Aboriginal and/or Torres Strait Islander women with GDM have type 2 within 3 years post-partum)
  - Add GDM to medical history
  - Recall yearly for diabetes screening (page 216) and Adult Health Check (STM, page 222)
- Talk about
  - Early check in next pregnancy — testing for diabetes, may have gestational diabetes in future pregnancies
  - Breastfeeding — may help reduce future risk of obesity and diabetes for both mother and baby
  - Healthy food, drink and physical activity
  - Maintaining a healthy weight may prevent future gestational diabetes. Consider referral to dietitian

Table 4.1 Postpartum monitoring and management according to type of diabetes

Type	BGL checks in first 24-hours after birth	BGL checks after 24-hours	BGL targets	Glucose-lowering medications
GDM	Before breakfast and 2 hours after meals	Not required if initial BGL on target otherwise, manage as type 2 diabetes	Fasting: 4-7mmol/L Post-meal: 5-10mmol/L	Stopped after birth **medical consult** if BGL above target
Type 1 diabetes	Before and 2 hours after meals and overnight	Guided by endocrinology / diabetes educator		Insulin must not be stopped. Guided by endocrinology Typically use half the pre-pregnancy dose and then titrate
Type 2 diabetes	Before breakfast and 2 hours after meals Before meals only if on insulin	Guided by endocrinology / diabetes educator initially, frequency usually reduced if not on insulin		Metformin and/or insulin only. If not on insulin before pregnancy, can usually be stopped

Obesity

- See — Healthy weight in pregnancy (page 114) for classifications of BMI and recommended gestational weight gain
- Excessive weight gain during pregnancy and retention of weight after birth can increase risk of complications in future pregnancies
- Healthy eating, physical activity and breastfeeding should be discussed as strategies for a return to pre-pregnancy weight
- Breastfeeding may help women lose weight and reduce the risk of obesity in the baby
- Women with obesity are less likely to initiate or maintain breastfeeding. Appropriate support should be provided including consideration of referral to lactation consultant
- Consider referral to dietitian

Newborn screening test

- Used to screen babies for rare genetic metabolic or endocrine conditions
- A heel prick test is collected onto a special card — usually done in hospital

Do first

- Explain and demonstrate procedure
- If parents decline to have infant screened
  - Record reason for non-collection in baby's medical records
  - Complete and return screening collection card. Record reason for non-collection on card

Do

Document

- Get card from nearest hospital
- Do not touch the circle area on card — contamination of sample may occur
- Follow the instructions on the card. Fill out details using a black or blue pen, before starting test
  - If test is a repeat collection — write 'repeat' on card
- Record collection (including card number) on the 'Examination of the Newborn' page on baby's chart (if first test), and in baby's medical records

Perform test

- Blood ideally collected 48–72 hours after birth (still useful if collected after 72 hours)
- Prepare equipment — screening collection card, gloves and sterile lancet (point not more than 2.4mm) cotton wool ball or gauze and small sticking plaster
- Wrap baby securely. Have parent hold or breastfeed baby so baby is relaxed
- Make sure heel is pink and warm so blood flows easily — keep heel lower than body
  - If heel cold and blood won't flow — warm the foot
  - Pressing firmly against skin before pricking may help blood flow
- Clean heel with damp cotton wool ball and allow to dry completely
  - Test is unreliable if contaminated with water, faeces, talc and urine etc

- Prick on inside or outside edge of heel on plantar (bottom) surface of foot, use side of heel facing down — Figure 4.1.

Do not squeeze/milk heel — excess tissue fluid will be expelled. Let blood drip out

- Wipe away first drop of blood
- Let large drop of blood form. Absorb blood with filter card, the correct side is marked on the card
- Put drop in centre of circle and allow it to spread by itself. The circle usually not filled with first drop. Put more drops in centre of circle and let the blood spread until circle completely filled — Figure 4.2
  - Do not let blood dry between drops
  - Only fill from correct side as marked on card
  - Turn card over to check circle full on both sides
  - Completely fill circle before moving to next
- Fill other circles the same way. At least 2 circles must be completely filled

Figure 4.1

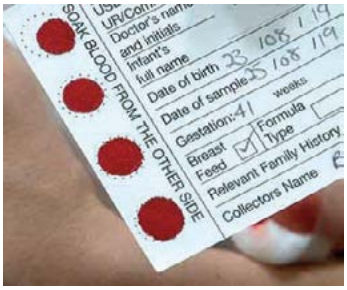


Figure 4.2

Dry and send card

- Card needs to be air dried for at least 4 hours at room temperature and not more than 30°C, away from sunlight, moisture or splashes
- Use rack or edge of bench to dry card. Stand up to let air flow to both sides
- Put card in envelope only when totally dry
  - If more than one card being sent — pack so blood spots alternate top and bottom to reduce cross-contamination
  - Do not put card in plastic — may sweat, especially if not completely dry
  - Put envelope inside another addressed envelope
- Mail direct to address on card as soon as possible

Follow-up

- Only abnormal results are reported to health clinic or carer — **medical consult**
- Carers are told directly of any anomalies

Postnatal care of baby

For immediate care of baby after birth — see Newborn resuscitation (page 7), Newborn care (page 199)
Related topic — see also Postnatal care of mother (page 211)

Red Flags — Urgent Medical Consult	Baby at high risk — more frequent review and further assessment
• Difficulty breathing • High temperature • Not feeding well • Signs of withdrawal in first few days (maternal substance misuse) — irritable, jittery, high pitch cry • Below birth weight at 7-14 days old	• Difficult birth • Preterm birth • Low birth weight • Sibling with growth issues or involvement with child protection services • Domestic family violence • Maternal mental health concerns • Maternal substance abuse

Schedule of visits

- If worried that woman or baby are medically or socially at risk — keep regular contact with woman and review baby more than once a week
- Planned schedule of visits should consider individual woman and baby's needs
- If difficult to see woman and baby as often as recommended — opportunistically assess wellbeing and provide care
- First visit within first 24 hours of birth *THEN*
  - 2nd day following birth
  - 3rd day following birth
  - 4-7 days following birth
  - 7-10 days following birth
  - Weekly until 6 weeks following birth
  - 8 weeks following birth

First postnatal visit

First visit should be completed as soon as possible after mother and baby return to community

- First visit will be long. Spend time getting to know the woman and explaining what needs to be done
- Review discharge paperwork and take detailed history and examination. Check birth paperwork completed — if not, contact maternity unit

Ask

- If carer has any concerns
- Baby's feeding, sleeping and alertness level
- Urine — should be 6 or more wet nappies every day
- Faeces — changes from dark green to yellow paste, frequency variable
  - Breastfed baby may pass faeces several times a day or none for 5 days. Lack of faeces in breastfed baby is not a concern if no other signs of illness or distress
  - Carefully monitor formula fed baby. If appears constipated — check how formula being prepared — see Postnatal nutrition for mother and baby (up to 6 months old) (page 228)
- Social and emotional wellbeing, conditions at home — family support, housing finance and social issues
- Substance use including passive smoking

Check

- Calculate REWS — AVPU, respiratory distress, RR, O_2 sats, pulse, central capillary refill time, Temp
- Weight, length, head circumference — plot on growth chart
- Immunisation status — **medical consult** if birth immunisations not given
- Head-to-toe exam — with attention to
  - Alertness
  - Interaction with carer
  - Any dysmorphic (odd) features
  - Fontanelles — sunken or bulging
  - Eyes — discharge, redness or jaundiced (white of eyes yellow)
  - Mouth — thrush (page 241) (white patches that don't wipe away with cotton bud)
  - Ears — redness or discharge
  - Chest and abdomen
  - Umbilicus (belly button) — redness, infection, bleeding
  - Skin — colour, skin folds, cleanliness, nappy area for rash
  - Moves arms and legs equally on both sides

Do

- Newborn screening test (page 221) ideally 48–72 hours after birth if not done
- Neonatal hearing test — **medical consult** if not done
- Enrol for Medicare and the shared electronic health record

Discuss

- Feeding methods — see Postnatal nutrition for mother and baby (up to 6 months old) (page 228)
  - Encourage and support breastfeeding (page 232)
  - If baby bottlefed talk with mother or carer about equipment, formula feeding (page 228) and the need for frequent checks at clinic
- Growth (STM, page 166)
  - Start growth chart — measure and plot every visit
  - Show growth chart to carer and explain the purpose and current growth
  - **Medical consult** if not gaining at least 150g a week or below birth weight after 7 days
- Immunisation schedule
- Smoking, alcohol and other drugs
  - Avoid smoking around baby and children
  - Make home a smoke-free place
- Hygiene
  - Talk with woman about cord care — put nothing on stump, fold nappy below stump, wash and dry stump if it gets soiled
  - Hand hygiene when tending to baby
  - Gently wash and keep face clean
  - Change nappies regularly and wipe skin well to avoid nappy rash
  - Bath baby at least every second day
- Safe sleeping
  - Sleep baby on their back
  - Do not cover head or face
  - Do not smoke near baby
  - Use a firm flat mattress and clean bedding
  - If co-sleeping adults should not drink, smoke or take drugs. Baby should be between the edge of mattress and carer
- Injury prevention and use of car seats

Follow-up

- Advise carer to bring baby to clinic if any red flag signs
- Refer to multidisciplinary team as indicated — at minimum child health nurse and doctor
- Arrange **medical follow-up**

Follow-up visits

Ask

- About red flag items
- About feeding

Check

- Calculate REWS — AVPU, respiratory distress, RR, O_2 sats, pulse, central capillary refill time, Temp
- Weight, BGL
- Weight, length and head circumference (STM, page 166) — plot on growth chart and check trend of growth
- Head-to-toe exam — see first postnatal visit check
- Interaction between carer and baby — attentiveness of carer to baby

Do

- Discuss feeding, growth, sleeping, hygiene, injury prevention — see first postnatal visit

Follow-up

- Check any problems previously identified have resolved

6-8 week postnatal check

- Will be long. Spend time getting to know woman and explain what needs to be done
- Take detailed history and examination

Check

- History and examination as per first postnatal visit *AND*
- If mother had positive syphilis serology — check baby's risk of congenital syphilis was assessed
- Baby's development
  - Looking at carer
  - Starting to smile and vocalise (make noises)
  - Holds head unsupported when sitting or lying

Do

- Offer 6-8 week immunisations
- Discuss feeding, growth, sleeping, hygiene, injury prevention — see first postnatal visit

Follow-up

- Advise carer to bring baby to clinic if any **red flag** signs
- If any concerns about growth — **medical consult**
- **Medical/midwife/child health consult** to check
  - Developmental assessment (ASQ TRAK/ASQ 3)
  - Eyes for red reflex
  - Heart sounds for murmurs
  - Femoral pulses
  - Hips for developmental problems
  - In boys testes in scrotum

Postnatal nutrition for mother and baby (up to 6 months old)

- A healthy diet can help new mothers to recover from birth and manage stress and tiredness
- Healthy eating in the baby's first two years of life promotes good growth, health and development

Mother's diet

- Encourage mothers to eat until they feel full
- Include a variety of breads and cereals, vegetables, fruits, meats, milk, cheese and yoghurt
- Breastfeeding mothers need extra nutrients but not a lot of extra kilojoules (energy)
- Promote drinking at least 2 litres of water every day
- Advise mother it is safest not to drink alcohol when breastfeeding — see Breastfeeding (page 236)
- Check breastfeeding mothers are taking 150microgram **iodine** supplement, oral, daily — see Postnatal care of mother (page 211) and other supplements if prescribed (eg for anaemia)
- **Refer** to dietitian if any nutrition or food security concerns

Babies diet

Breastfeeding

- Breastfeeding provides short and long term health benefits for baby, mother and community. Any breastfeeding is beneficial
- Breast milk contains protective factors that boost baby's immune system
- Breastfeeding takes time to establish and can be difficult. Support from health professionals and families is needed to support and maintain breastfeeding
- Breast milk has all the nutrients baby needs for the first 6 months of life. No other foods or fluids, including water, are needed until around 6 months of age
- Breastfeeding is the best option for babies even if mother's diet is poor
- Breast milk when offered with other foods provides important nutrition for at least the first 2 years of life

Ask

- If mother has any concerns about breastfeeding (eg pain, supply, baby crying a lot, baby's weight gain) — see Breastfeeding — common issues (page 238). Treat any issues early and **refer to midwife/lactation consultant**

Do

Educate caregiver's about key messages

- Exclusively breastfeed (do not give other food or fluids) until baby is around 6 months of age
- Introduce complementary (solid) foods at around 6 months of age when baby shows developmental signs of readiness — see Infant and child nutrition (STM, page 163)
- Continue to promote breastfeeding throughout the first 2 years of life and for as long as mother and child want

Time away from baby

- Support and encourage mother to stay with her baby wherever possible
- If mother is away from a young baby for any reason recommend expressing breast milk — see Breastfeeding (page 235) instead of providing formula
  - Providing formula may reduce breast milk supply and negatively impact on continued breastfeeding

Formula feeding

- It may be necessary for infants to be fed formula for a variety of reasons including health concerns
- Encourage mothers to continue any breastfeeding where possible. Breast and formula feeding can be combined when necessary
- Infant formulas are expensive
- Cleaning and sterilising bottles is important to prevent infections. This can be difficult in remote communities

Do

- Encourage responsive feeding following baby's hunger and fullness signs — Table 4.2
- Babies should be drinking formula from a cup by 6 months of age. Younger baby can also drink from a cup — refer to midwife to teach safe cup feeding for young baby

- Monitoring growth regularly is the best way to know if baby is having enough formula. Refer to midwife, child health nurse or dietitian if there are any feeding concerns or if baby's growth is not following a growth line — see Infant, child, youth growth (0-15 years) (STM, page 166)

Table 4.2 Signs of hunger and fullness in healthy growing babies

Signs baby is hungry	Signs baby is full
Hands are kept near mouth, chews on fingers Makes sucking noises Puckers lips Searches for nipple	Sucks slowly or stops sucking Turns or pushes away from the nipple Relaxes hands and arms Falls asleep

Teach caregiver to prepare formula correctly

Clean and sterilise all equipment used for making formula

- Wash hands and clean preparation surfaces
- Clean all bottles, teats and cups in hot soapy water using a bottle brush
- Rinse equipment under clean running water

Use correct infant formula

- Newborn or stage 1 formula should be used for all formula fed infants until 1 year old, unless a special formula is prescribed. Follow-on or stage 2 formulas are not needed
- Do not use cow's milk as a drink until after 1 year old
- Infant formula is not needed after 1 year old unless prescribed. Offer water and full cream cow's milk as drinks — see Infant and child nutrition (STM, page 163)

Mix formula correctly

- Cleaning and sterilising bottles is important to prevent infections
- Follow exactly instructions on can. Use the scoop from that can and add the number of scoops and amount of water recommended on can. Different brands have different sized scoops and amounts of water needed per scoop
- Fill scoop and level off top with a clean knife. Do not pack down formula
- Use cooled, boiled water to make formula
  - Boil fresh water in a pot on stove for 5 minutes or boil twice if using electric kettle
  - Let water cool before making the formula — mixes more easily and stops vitamins being destroyed by heat
  - Do not use the water that was used to sterilise equipment to make formula

- Make up 1 bottle at a time as needed
  - Store prepared formula at back of fridge. Do not store in fridge door
  - Warm bottle to tepid in a cup or pot of warm water. Do not warm in microwave
- Discard leftover formula that has been offered to baby — Do not reheat
- Discard any unused formula after 24 hours

Starting complementary (solid) foods

- Complementary foods that are rich in iron are needed from around 6 months of age when baby is showing developmental signs of readiness to eat — see Infant and child nutrition (STM, page 163)

Supporting resources

- Healthy eating for breastfeeding mums poster
- Infant formula preparation in pictures poster

Breastfeeding

Breastfeeding is the best way to feed a baby and has short and long term benefits for both mother and baby

Breastfeeding mothers need

- Support from family, partner, friends and clinic staff
- Time to rest and enjoy baby
- Healthy foods — including water, bush foods, vegetables, fruit, breads, cereals, meats
- To avoid smoking, alcohol and other substances

Supporting breastfeeding

- Keep baby and mother together after birth and in early days and weeks of life to enable breastfeeding and bonding
- Promote skin-to-skin contact between mother and baby throughout the postnatal period, especially before and after breastfeeding
- Encourage mother to recognise when baby ready to breastfeed — Figure 4.3. Offer help if needed

Figure 4.3

Baby feeding cues © State of Queensland (Queensland Health)

Breastfeeding assessment

- Offer a private space to do a breastfeeding assessment
- Ask about breastfeeding history and any current problems
- Check breasts for abnormalities, trauma or other issues — See Breastfeeding — common issues (page 238)
- Observe a breastfeed to check positioning, latch and that baby has an effective suck and swallow
  - Allow mother to position and adjust baby

Table 4.3 Attachment

Optimal Attachment — Figure 4.4	Poor Attachment — Figure 4.5
• Baby's mouth wide open with most of dark part of breast around the areola (nipple) in baby's mouth • Baby's lips spread around areola with no obvious air leaks • Baby's jaw moves when sucking • Swallowing can be seen and heard • Milk can be seen in baby's mouth	• Only the nipple is in baby's mouth • Baby's mouth is not opened wide • May hear 'clicking' noise when baby sucks • Mother may have nipple pain or damage

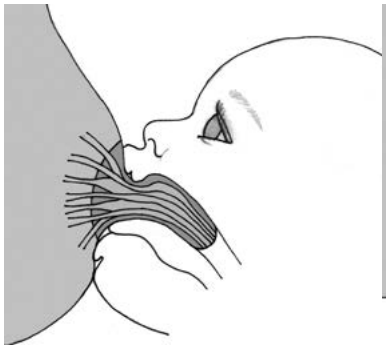


Figure 4.4

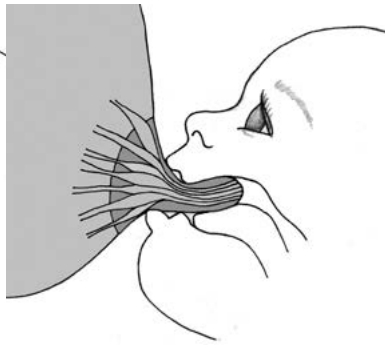


Figure 4.5

Positioning baby

- Make sure mother is comfortable and can see her breast as baby latches
- Unwrap baby so arms and hands are out and able to move and mother and baby have skin to skin contact
- Mother brings baby close to her body
  - Tummy to tummy — baby's head and shoulders facing breast
  - Bottom tucked into mother's tummy, nose out
  - Baby's nose and mouth at level of mothers nipple
- Mother supports baby behind shoulder/neck area — Figure 4.6
  - Avoid grasping or holding baby's head to position baby at breast

Figure 4.6

- Mother touches baby's cheek with nipple to encourage baby to open mouth
- When baby's mouth wide open and tongue down, mother can move baby toward her breast, baby's mouth to her nipple
- Reassure mother it may take a few tries to attach baby to breast
- Different positions may help baby to get attached and feeding

How to know breastfeeding is going well

- Mother responds to baby's hunger signs — see Table 4.3
- Baby has at least 8-10 feeds every day and feeds for 10-40 minutes each breastfeed
  - Baby cannot be overfed on breast milk, will drink the right amount for good growth
  - If baby sick or not feeding well, it might not feed as long as it needs to
- Baby wakes themselves when wanting a breastfeed and is content after feeding
- Mother feels breasts soften during and after feeding
- Baby passes around 6 wet nappies each day
- Baby is growing well (weight and length)

If help needed

- Refer to midwife/lactation consultant for help if mother, family or clinic staff worried
  - Early referral can reduce long term feeding problems
- Check for and treat breastfeeding issues — See Breastfeeding — common issues (page 238)
- **Medical consult** for mother and baby

Expressing and storing breast milk

- Breastfed baby may need to be looked after by someone else (eg if mother goes to hospital)
- Mother may also express breast milk for sick or preterm baby
- If baby is very young — encourage mother to express enough breast milk to give baby for the time she will be away and to continue to express when away from baby
  - No other drinks or food should be given to young baby — See Postnatal nutrition for mother and baby (up to 6 months old) (page 238)
- Older baby may be having other food or water. Give these until mother returns
- Can hand express — Figure 4.7 or use manual or electric breast pump — Figure 4.8
- Support mother with expressing — make sure she has the correct information and help, advise her that baby will continue to have the benefits of breast milk
- Midwife/lactation consultant can help if needed
- Store breast milk in clean, sealed plastic container
  - Fridge — up to 72 hours at the back where it is coldest and not in the door
  - Freezer inside fridge — up to 2 weeks
  - Freezer compartment of fridge (with separate door) — up to 3 months
  - Deep freeze — 6–12 months
- Expressed milk separates into layers. Shake container before giving to baby
- Warm bottle of breast milk in hot water if needed. Warm to body temperature only
  - Fine to use thawed and doesn't have to be warmed
  - **Do not** use microwave to thaw or heat milk
- Talk with midwife or lactation consultant for more information

Figure 4.7

Figure 4.8

Special circumstances

Medicines

- **Do not give medicine to breastfeeding mother without checking it is safe** — check with doctor or midwife, a medicine reference book or contact your closest Pregnancy Drug Information Centre for more information

Preterm babies

- Breast milk is especially good for preterm, small, sick babies
- If baby not able to breastfeed — try other methods of giving breast milk
- Express into baby's mouth, cup feeding, finger feeding — **refer** to midwife/lactation consultant

Maternal blood-borne viruses

- Sometimes mother advised not to breastfeed or to breastfeed for a short time only to lessen risk of passing virus to baby (eg HIV or HTLV1 positive — See Human T Cell Leukaemia Virus type 1 (HTLV-1) (STM, page 414)
  - Talk with local public health unit, sexual health specialist, paediatrician and lactation consultant to make individual breastfeeding plan
- Mothers with syphilis, hepatitis A, hepatitis B, hepatitis C can breastfeed their babies
  - If hepatitis C positive and cracked or bleeding nipples — advise to express and discard milk until bleeding areas healed
  - Talk with someone experienced in this area — PHU or lactation consultant

Alcohol and other substances

- Usually best for baby to breastfeed even if mother smoking or drinking alcohol
- Advise mothers
  - Not drinking alcohol is the safest option when breastfeeding
  - Baby will get alcohol and other substances through her breast milk.
  - Nicotine may reduce milk production
  - Adult who has been drinking alcohol should not sleep next to baby
  - Talk about best way to take care of baby if she is drinking. Ask about family support and involve other services for help
- If mother does drink, advise to
  - Avoid drinking immediately before breastfeeding
  - Think about expressing milk in advance if she is planning to drink
  - Limit alcohol to no more than 2 standard drinks (STM, page 279) a day
- If mother does smoke, advise
  - Keep baby away from passive smoke. Don't smoke just before or while breastfeeding

Older babies

- Exclusive breastfeeding for about the first 6 months is best for all babies. This means breast milk only — no other food or drink, not even water
- At around 6 months — start healthy iron-rich solid foods and boiled and cooled water in a cup — See Infant, child, youth growth (0-15 years) (STM, page 166)
- Continue to breastfeed until 1–2 years or longer if mother and baby want — any breast milk is good for older babies and prevents infections

Next pregnancy and new baby

- Some women keep feeding older child when pregnant with another baby. Usually quite safe and should be supported
- Some mothers continue feeding older child after new baby is born. May feed babies together or at different times
  - Important that new baby is fed first and has plenty of time at the breast
  - Usually enough milk for both but growth of both children, especially new baby needs to be monitored
- Toddlers can be very demanding so woman needs to understand that new baby must not miss out on feeding
- New baby needs to put on at least 150–200g each week. **If growth poor — urgent medical consult**

Suppressing lactation

- Woman may want to stop milk supply (eg very sick, baby died or given to someone else)
- Women start making milk at about 20 weeks pregnant so mother may need help with suppressing even after loss of very preterm baby
- Advise minimal handling of breasts (avoid massage or stimulation) and wear a firm bra
- If has been breastfeeding — may need to express some milk for comfort and decrease over few days until milk supply decreases
- May take a few days. Advise to take **paracetamol** *OR* **ibuprofen** — See Pain management (acute) (STM, page 326)
- If concerns **medical consult** and talk with midwife or lactation consultant

Supporting resources

- Australian Breastfeeding Association website
- Raising children network website

Breastfeeding — common issues

Most issues are temporary and not a reason to stop breastfeeding. Give consistent, supportive advice. Talk with midwife or lactation consultant if not sure

Early, effective treatment of breast engorgement and blocked milk ducts can prevent mastitis

Ask

- How baby is attaching and feeding — see Breastfeeding (page 232)
- History of breastfeeding issues
- Mother's postnatal wellbeing — see Postnatal care of mother (page 211)

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- Breasts and under arms for tender areas, redness, lumps, swelling, nipple or tissue damage
- Check baby's history and neonatal check — see Postnatal care of baby (page 223)

Mastitis

- Inflammation of breast tissue
- Always consider in breastfeeding woman with flu-like symptoms and/or fever
- Usually only one breast or part of one breast is affected

Causes

- Infection in breast due to
  - Cracked nipples with broken skin
  - Untreated engorgement or blocked milk ducts
- Prolonged pressure on breasts — tight bra, holding or pressing on breast during feeding

Do

- **Medical consult** for all women who may have mastitis
  - If very unwell — need to send to hospital, IV antibiotics
  - If doesn't need IV antibiotics — give **cefalexin** oral — adult 500mg, 4 times a day (qid) for 10 days
  - If allergy to penicillin — **medical consult** for **clindamycin**

- For pain relief — give **paracetamol** *OR* **ibuprofen** — see Pain management (acute) (STM, page 326)
- Encourage woman to continue breastfeeding to empty breast
  - Feed from affected breast first **unless pus draining from nipple**. If pus — hand-express to empty the breast
  - Advise to feed baby often and check baby is well-positioned and sucking well, especially on affected side to improve milk drainage from breast
  - If baby doesn't feed well on affected side — encourage woman to express milk to empty the breast
- Encourage rest, good diet and plenty of fluids
- Assess daily until resolved
- If not improved after 24 hours of treatment — **medical consult**

Breast abscess

- Woman looks and feels very unwell and usually has fever
- Localised swelling, redness, pain in one breast
- May have 'pointing' swelling — like a boil on skin

Causes

- May be caused by a bacterial infection that hasn't drained properly, localised collection of pus
- Can develop into mastitis if not treated properly

Do

- If febrile or flu like symptoms — **medical consult** about management, IV antibiotics, IV fluid, send to hospital
  - If doesn't need IV antibiotics — give **cefalexin** oral — adult 500mg, 4 times a day (qid) for 10 days
  - If allergy to penicillin — **medical consult** for **clindamycin**
- If not febrile and no flu like symptoms — use hot packs when feeding and cold packs after feeding
- For pain relief — give **paracetamol** *OR* **ibuprofen** — see Pain management (acute) (STM, page 326)
- Advise mother to
  - Rest and drink plenty of water
  - Handle breasts gently
  - Breastfeed often — at the breast or if too painful or pus near nipple express by hand or pump on affected side — see Breastfeeding (page 232)
- If not improved after 24 hours — **medical consult**

Breast engorgement

- Woman not unwell and may have low-grade fever
- Both breasts and axilla become hard and often swollen, tender, warm

Causes

- Increased blood supply to breast when milk 'comes in' around 3–5 days after birth
- Breasts not emptied by regular feeding due to sleepy baby, restricted feeds or mother and baby separated

Do not

- Do not restrict woman's fluid intake — won't help engorgement and may be harmful

Do

- Reassure mother that engorgement will improve after 24–48 hours
- Pain relief for mother can include
  - **Paracetamol** *OR* **ibuprofen** — see Pain management (acute) (STM, page 326)
  - Ice packs to breasts after feeds
  - Expressing some milk between feeds to relieve tension in breast. Can do this in shower or after warm compress
- Management is aimed at getting baby to feed well — see Breastfeeding (page 232)
  - Allow baby to feed completely from first breast before offering other. Start next feed on breast that was offered last — will be the fullest
  - Allow breast that baby not feeding from to drip onto cloth or pad
  - Avoid ill-fitting bras
  - Teach mother to massage or compress breast while feeding
  - Apply warmth to the breast while feeding — may help with the flow of milk
- Assess daily until resolved

Blocked milk ducts

- Woman looks and feels well
- Suspect blocked milk duct if tender lump or swollen area in breast

Do

- Give **paracetamol** *OR* **ibuprofen** — See Pain management (acute) (STM, page 326). Give time to take effect before starting feed
- Feed from affected breast first make sure breast emptied at each feed
- Apply warmth to area before feed — hot water bottle, hot pack or shower
- During feed gently but firmly massage lump toward nipple
- Change feeding positions each feed to help drain breasts
- Advise mother to come back to clinic straight away if fever or feels unwell — may be developing mastitis

Sore nipples

- Sore nipples are common and especially in first 2 weeks after birth
- If untreated — can lead to cracked or bleeding nipples *OR* mastitis

Causes

- Usually poor attachment — often due to breast engorgement or poor positioning
- Occasionally eczema, bacterial or fungal infections of skin — check mother's nipple and baby's mouth for oral thrush

Do

Before feed

- Reassure woman that nipples heal well if care is taken with attachment
- Give **paracetamol** *OR* **ibuprofen** for pain relief — see Pain management (acute) (STM, page 326). Give time to take effect before starting feed
- Express a little breast milk and rub onto nipple to soften areola and get milk flowing for feed
- Hold a warm compress against breast to soothe and encourage milk flow
- If fungal infection — **medical consult** about applying **miconazole 2%** cream, twice a day (bd) to nipples and rubbed onto baby's cheeks and tongue
  - If infection spread to baby's mouth — give baby **nystatin** oral liquid — child 1mL, 4 times a day (qid)
- If bacterial infection suspected — **medical consult**
- Feed both breasts. Start on the side last finished

After feeds

- Check nipple for blanching — indicates baby hasn't attached well
- Rub expressed breast milk onto nipple between feeds and let air dry. Avoid use of creams
- Assess daily until resolved
- Talk with midwife/ lactation consultant

Milk supply

- In early postnatal period, milk supply can be affected by
  - Retained products (part of placenta or membranes left inside uterus)
  - Poor attachment of baby to breast — due to positioning or preterm baby
  - Sore nipples making attachment challenging
  - Hormonal issues, breast surgery, some medicines
- Later mother may be concerned about low supply if breasts feel soft or baby feeding often. These can be normal. Baby will naturally want to feed more often during growth spurts or if unsettled

Do

- If retained products suspected — **medical consult**
- Reassure mother that baby is getting enough breast milk if bright eyes, wet mouth and tongue, 5–6 wet nappies a day, pale coloured urine and weight gain
- Supply will usually increase within a few days if
  - Baby is fed when it wants to be fed
  - Frequency and duration of feeds are increased
  - Mother expresses breast milk — see Breastfeeding (page 232)
- Supply will decrease if baby has other drinks (eg formula or water)
- If growth or hydration concerns — **medical consult** to consider domperidone tablets
  - Also need to keep expressing to ensure supply
  - Domperidone should be slowly reduced once supply established

Supporting resources

- Australian Breastfeeding Association website

5. Sexual health

STI checks for young people

Sexually-active young people are at high risk of STIs and are generally under tested

- Young person often presents with incomplete history. Sexual activity, consensual relationships, age of partner/s may not be revealed until later consults or as you build a relationship
- Actively screen sexually active young people for STIs even if in a consensual relationship with 1 partner
- If under 18 years — you must be aware of child protection reporting requirements in your state or territory before testing — see Child neglect, abuse and cumulative harm (STM, page 153)

If you suspect sexual abuse or reportable sexual activity, as defined by your state/territory legislation — you must notify child protection

- **Medical consult**
  - Doctor will advise about STI testing and may talk with child protection service or sexual assault referral centre

Before testing

- If under 14 years — **medical consult**
- If under 16 years — you must obtain consent from parent/carer or assess whether to treat as competent minor (STM, page 136)
- If not able to obtain consent or unresolved child protection issues — **medical consult**
- Explain the importance of doing STI test
  - Most STIs are easily treatable
  - Health consequences of STIs
- Explain you need to report to child protection service if
  - Under certain age — defined by state/territory legislation
  - Positive results depending on age — defined by state/territory legislation
  - Safety concerns

Do

- If 14 years or over and issues of consent and child protection have been addressed — offer STI check men (STM, page 305), women (page 246)
  - After doing STI check tell young person to come back for results
- Report any identified issues to child protection service — Do not wait for STI results before you report

Discuss

- Treatment needed if positive result
- Safer sex and contraception
  - Are the responsibility of both partners
  - Offer condoms
- Consent and healthy intimate relationships
  - Your body is your own
  - Sexual activity occurs *with* someone not *to* someone
  - Consent must be freely given, informed and mutual
  - Consent between partners must be given each time and a person can always change their mind during sex
- Protective behaviours if you suspect harm or power imbalance — see School-aged and young person's health check (STM, page 146)
  - Help person to identify safe people in their life

Follow-up

- **Medical consult**
  - Contraception (page 331)
  - Treatment
  - Contact tracing (page 262) — may find other young people at risk of STIs and/or child protection issues
- If under 14 years and positive STI result — repeat notification to child protection service
- If 14 years or over and positive STI result — may need to report depending on state/territory requirements — if not sure talk with more experienced staff member, doctor or child protection service
  - Do Full STI check men (STM, page 305), women (page 246)
  - See STI management — men (STM, page 309), women (page 255)

STI checks for women

STIs under diagnosed — often missed as may have no symptoms or minor symptoms that clear quickly

- STIs can be at any age but are more common under 35 years
- If under 18 years — consent and child protection issues
  - If 14–18 years — first see STI checks for young people (page 244)
  - If under 14 years — see Child sexual abuse (STM, page 153)
- STI checks routinely recommended in 15–34 year age group
- Times to offer an STI check include
  - As part of another consultation (opportunistic) if 15–34 years
  - As part of Adult Health Check (STM, page 222)
  - Community-wide screening and outbreaks
  - If symptoms and/or risk factors suggest STI
  - If asked for by person even if not long since last check
  - All pregnant women
  - Opportunistically if 15–34 years, especially if from outside community
- Offer opportunistic Standard STI check every 6 months (twice a year) and use a recall system

Red Flags	
Urgent Medical Consult	**Medical Consult**
• Syphilis in pregnancy	• Any STI in pregnancy

Risk factors for STIs

- Living in community with high STI rates
- Age
  - High risk — sexually active under 35 years
  - Highest risk — sexually active under 25 years
- STI or PID in past 12 months
- New sexual partner in past 3 months or more than 1 partner in past 6 months
- Drug or alcohol use — increases high-risk behaviours (eg multiple sexual partners, unsafe sex)
- Recent travel

Additional risk factors for HIV

- Existing STI
- Behavioural risk factors — person or their partner is a man who has sex with men, is transgender and/or sistergirl, from overseas or person who injects drugs

Point of care (POC) testing for STIs

- POC testing for chlamydia/gonorrhoea/trichomonas is available in some clinics
- POC and laboratory tests are completed on the same collection site (single urine sample is usually enough volume for all tests, additional POC swabs are required for other sites)
- **Always do** syphilis serology and other laboratory tests regardless of POC result
- Syphilis POC testing is only suitable in restricted situations and can only be carried out by trained operators — refer to your health service guidelines or trained colleague

Three types of STI checks

- Standard — pathology testing, no detailed history or examination
- Full — pathology testing plus history and examination, contact tracing
- Pregnancy (page 250) — series of checks with additional tests at different times during pregnancy and postnatal

Standard STI check

Full pathology testing, no detailed history or examination.

Indications

- Opportunistic
- Adult Health Check (STM, page 222), yearly STI check, community screening
- 3 month re-test following a positive test result
- 6 week postnatal check

Sometimes there is not enough time or only some samples that can be collected. It is still useful to do some tests from Standard STI check

Do

- Ask about symptoms — abnormal vaginal discharge (page 264), lower abdominal pain, abnormal vaginal bleeding (page 302), sores/ulcers (page 268)
  - If symptoms — see relevant protocol

Collect

- Self-collected lower vaginal swabs × 2 (NAAT and MC&S)
- *OR* urine if woman does not want to collect swabs
- *OR* if cervical screening due and/or doing genital examination — endocervical swabs (page 288) × 2
- Samples for POC Test if available
- Send for
  - NAAT for chlamydia, gonorrhoea, trichomonas
  - MC&S for gonorrhoea culture
- Take blood for HIV serology, syphilis serology
  - Also do syphilis POC Test test if indicated
- If hepatitis B status unknown or not immune (no evidence of previous infection or immunisation) — take blood for HBsAg, Anti-HBc, Anti-HBs

Follow-up

- Tell woman to come back for results from laboratory or POC Test
- If any positive result — do rest of Full STI check including history, examination, treatment, contact tracing
- When giving results for STI check — be very clear about what has been tested for and what conditions the results relate to. **Do not** say things like 'You have the all clear' or 'You don't have an STI'

Full STI check

Indications

- Symptoms — vaginal discharge, pain on passing urine, lower abdominal pain
- Asks for a check
- If positive result from Standard STI check — for additional assessment
- Contact (partner) of someone with an STI (page 262)

Check file notes

- Date and results of last STI check
- Treatment offered and completed
- Hepatitis B status
- Date and result of last cervical screening
- Contraception use

Ask

- Last menstrual period and any abnormal bleeding
- Pregnant or planning to be
- Lower abdominal pain, pain with sex
- Vaginal discharge, itching, soreness
- Pain on passing urine
- Sores, rash, lumps on genitals
- Sexual partners
  - Regular or casual partners, do partners have other partners
  - New partners in past 3 months
  - Number of partners in past 6 months
  - Any concerns (eg non-consensual or unwanted sex)

Check

- Urine pregnancy test especially if no record of contraceptive use
  - If positive and woman has symptoms of STI — **medical consult** — see STI management (page 255)
- Rash including hands and feet or hair loss
- Mouth for ulcers
- Groin for enlarged or tender lymph nodes
  - If present — check lymph nodes at other sites
- Groin, vulva, anus for sores, other lesions, rashes
  - If present — see Genital ulcers and lumps (page 268)

Collect — for all women

- Self-collected lower vaginal swabs × 2 (NAAT and MC&S)
- *OR* urine if woman does not want to collect swabs
- *OR* if cervical screening due and/or doing genital examination — endocervical swabs (page 288) × 2
- Collect samples for POC Test if available
- Send for
  - NAAT for chlamydia, gonorrhoea, trichomonas
  - MC&S for gonorrhoea culture
  - If abnormal discharge — MC&S from low or high vaginal swab
- Take blood for HIV serology, syphilis serology
  - Also do syphilis POC Test test if indicated
- If hepatitis B status unknown or not immune (no evidence of previous infection or immunisation) *AND* all pregnant women — take blood for HBsAg, Anti-HBc, Anti-HBs
- If genital sore — use NAAT swab to swab base of ulcer (sore, scab, lump) or fluid from blister
  - Request — NAAT for herpes, syphilis, donovanosis

Do

- Ask for name/s of partner/s for **contact tracing** (page 262) if syndromic or presumptive treatment given or pathology positive
- **If symptoms of STI — offer immediate syndromic treatment**
  - If discharge — see Vaginal discharge (page 264)
  - If sores, ulcer — see Genital ulcers and lumps (page 268)
- In communities with high STI rates — think about presumptive treatment (immediate treatment even if no symptoms). Treat for gonorrhoea (page 256) (will also treat chlamydia) if
  - Asks for treatment or thinks she has put herself at risk
  - At high risk and unlikely to return for results
- If behavioural risk factors for HIV consider **medical consult** for PrEP (page 260)
- If symptoms of PID (eg lower abdominal pain, deep pain with sex) — see Pelvic inflammatory disease (page 272)
- Offer STI and safer sex education (page 263)
- Consider talking about contraception (page 331)
- Tell woman to come back for results

Follow-up

- If positive results — see STI management (page 255)
- When giving results for STI check — be very clear about what has been tested for and what conditions results relate to. Do not say things like 'You have the all-clear' or "You don't have an STI"

Pregnancy and postnatal STI checks

- Pregnancy STI check **always includes syphilis serology**
- Additional tests are carried out at different times during the pregnancy
- STIs in pregnancy can have serious consequences for mother and baby, including miscarriage, neonatal illness and death
- Regular testing, prompt management and prioritised contact tracing are important

Table 5.1 Timeline for pregnancy and postnatal STI checks

Timing	Do	Also include in check
First antenatal visit	Pregnancy STI check	• Hepatitis B serology regardless of recorded status • Hepatitis C serology • If history of preterm birth — add MC&S for Bacterial Vaginosis
28 weeks	Pregnancy STI check	If HIV negative at first visit — don't repeat unless risk factors
36 weeks	Pregnancy STI check	GBS swabs
Birth	Syphilis serology	If STI status unknown — do Pregnancy STI check
6 weeks postnatal	Standard STI check (includes syphilis serology)	

Pregnancy STI check

Ask

- Symptoms — abnormal vaginal discharge (page 264), lower abdominal pain (STM, page 332), abnormal vaginal bleeding (page 20), sores/ulcers (STM, page 319). If symptoms — see relevant protocols
- If history of herpes — see Genital herpes – Do in pregnancy (page 270)

Check

- Vulva for sores, scars, abnormalities at first visit
- Collect
  - Lower vaginal swabs × 2. Best collected by clinician at first visit, otherwise self-collected (page 252)
  - *OR* urine
  - *OR* if cervical screening due and/or doing genital examination (page 286) — endocervical swabs (page 288) × 2
  - Collect samples for POC Test if available
- Request
  - NAAT for chlamydia, gonorrhoea, trichomonas
  - Gonorrhoea culture
- Take blood for HIV serology, syphilis serology
  - Also do syphilis POC Test if indicated
- If genital sores
  - Dry swab base of ulcer (sore, scab, lump) or fluid from blister
  - Request — NAAT for herpes, syphilis, donovanosis
  - Treat straight away — could be syphilis. See Genital ulcers and lumps (page 268)

Do

- If any positive results from Pregnancy STI check — do Full STI check

Self-collected lower vaginal swabs (LVS)

Attention

- Used to test for
  - STIs
  - Vaginal infections such as thrush (candida)
  - Group B Streptococcus (GBS) in pregnancy (page 152)
  - HPV for cervical screening (page 297)
- Always check the specimen collection guide from your clinic's pathology laboratory

What you need

- See Table 5.2 for swab types used for various samples and tests
- pH paper

Table 5.2 Sample and swab types for self-collected lower vaginal swabs

Sample type	Test (request)	Swab type
Lower vaginal swab	NAAT — chlamydia, gonorrhoea, trichomonas	• *Aptima* swab and tube • *OR* dry swab — flocked if available
Lower vaginal swab	POC Test NAAT — chlamydia, gonorrhoea, trichomonas	• As per health service POC Test testing guidelines
Lower vaginal swab	Gonorrhoea culture	• Amies transport medium swab
Lower vaginal swab	MC&S — thrush, bacterial vaginosis	• Amies transport medium swab
Lower vaginal swab	HPV test	• Flocked swab (eg FLOQ) supplied by laboratory
Combined lower vaginal and anal swab	MC&S — GBS	• Amies transport medium swab

What you do

General procedure

- If more than one test being done (eg STI, vaginal infections, HPV) — number the swab packets/containers. STI swab is collected first
  - 1 = *Aptima* or dry swab (STI)
  - 2 = Amies transport medium swab (STI and other infections)
  - 3 = Swab for HPV test
- Have woman wash her hands, then give her the required swabs

- For swab with transport medium (eg *Aptima*, Amies) — Remove container, leave swab in original packet. **Do not** give container to woman
  - For dry swab — leave swab in original container, break seal
- Explain to woman she needs to have her legs apart — either
  - Sitting on toilet — Figure 5.1
  - *OR* Standing with 1 foot on toilet seat — Figure 5.2
- Give woman specific instructions for swabs needed

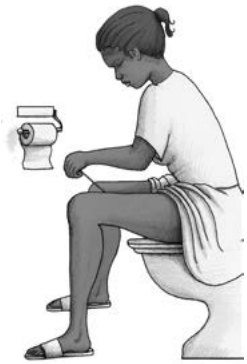


Figure 5.1

Small difference in method used for collecting STI and HPV swabs

- Put swabs on small tray or in paper bag — easier to manage and reduces environmental contamination

LVS for STI and other vaginal infections

Instructions for the woman

- Take first swab out of packet/container (numbered 1)
  - Put tip of *Aptima* or dry swab about 2–4cm (length of 1–2 finger joints) inside vagina — Figure 5.3
  - If *Aptima* swab — do not touch notched handle below groove
  - Turn swab around once, leave in vagina, count to 10, remove — Figure 5.3
  - Put *Aptima* swab back into packet *OR* dry swab back into container
- Take second swab out of packet (numbered 2)
  - Repeat collection procedure as for first swab
  - Put swab back into packet
- Use third swab if needed (numbered 3) — see LVS for HPV test for cervical screening (page 297)
- Wash hands, return swabs to nurse or ATSIHP

Figure 5.2

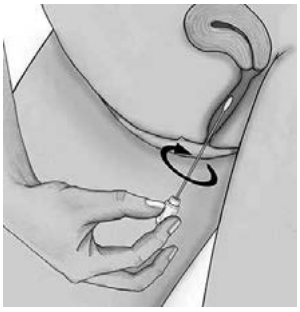


Figure 5.3

When woman returns swabs

- Swab 1 (*Aptima* or dry swab)
  - Take *Aptima* swab out of packet and put into *Aptima* tube. Break off handle at groove, do not touch section below groove. Put on cap
  - *OR* make sure dry swab in transport tube and cap on
  - Request 'LVS — chlamydia, gonorrhoea, trichomonas NAAT'
- Swab 2 (Amies transport medium swab)
  - Take swab out of packet
  - If doing pH test for trichomonas — touch swab on pH paper — see Vaginal discharge (page 264)
  - pH test unreliable if woman post-menopausal, semen or blood present
  - Put swab into Amies transport medium tube
  - If only doing STI check — request 'LVS — gonorrhoea culture'
  - *OR* if also testing for vaginal infection (eg thrush, BV) — request 'LVS — MC&S and gonorrhoea culture'
- Make sure swab containers correctly labelled, closed tightly
- Store and transport at room temperature

Combined lower vaginal and anal swab for GBS

Instructions for woman

- Take swab out of packet
- Put tip of swab about 2cm (length of 1 finger joint) inside vagina — Figure 5.4
  - Turn swab around once, leave in vagina, count to 10, remove
- Put same swab about 2cm inside anus — Figure 5.4
  - Turn swab around once, leave in anus, count to 10, remove
- Put swab back into packet
- Wash her hands, return swab to nurse or ATSIH

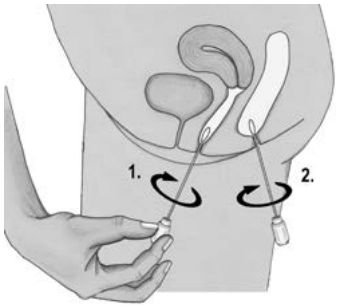


Figure 5.4

When woman returns swab

- Take swab out of packet, put into Amies transport medium tube
- Request 'LVS/anal — MC&S for GBS'
- Make sure swab container correctly labelled, closed tightly
- Store and transport at room temperature

STI management for women

- Get help and advice from local ATSIHPs, health council, respected community members about doing STI work in a culturally sensitive way
- Offer treatment **as soon as possible** to prevent complications and to stop the spread
- If person has symptoms/syndromes that are likely to be caused by STI or has put themself at risk — treat straight away. Do not wait for laboratory or POC Test results. See individual protocols
  - Genital ulcers and lumps (page 268)
  - Vaginal discharge (page 264)
  - Pelvic inflammatory disease (page 272)
- Treat people with positive pathology and named partners and contacts (page 262)
- If positive result on Standard STI check or individual test do the remaining checks to complete Full STI check — men (STM, page 305) women (page 248)

Red Flags — Urgent Medical Consult

- Syphilis in pregnancy
- HIV in pregnancy
- If pregnant woman has positive STI test *AND* previous premature rupture of membranes, preterm labour, low birth weight baby (under 2.5kg) — **obstetrician consult** as soon as possible
  - May need additional monitoring, tests and treatment

Positive pathology results

Chlamydia

- Notifiable disease. Follow local protocols, check with local sexual health unit if more information is needed
- If woman has positive test result — always ask about symptoms of PID (page 272)
  - Lower abdominal pain not a normal symptom of uncomplicated chlamydia

Do

- Give **azithromycin** oral — adult 1g, single dose
- Contact trace (page 262) and give partner/s same treatment
- Offer condoms but advise better not to have sex for 7 days after person and partner/s treated
- Arrange recall for re-test in 3 months, 4 weeks if pregnant

- STI and safer sex education (page 263)
- Consider talking about contraception (page 331)

Follow-up

- Re-test in 3 months — Standard STI check (page 247)
- Check HIV and syphilis serology done

Pregnancy considerations

- Re-test after 4 weeks — send urine or low vaginal swab for NAAT
- High priority for contact tracing (page 262) and treatment of woman and partner/s at same time if possible

Gonorrhoea

- Notifiable disease. Follow local protocols, check with sexual health unit if more information needed
- If woman has positive test result/s — **always** ask about symptoms of PID (page 272)
  - Lower abdominal pain not a normal symptom of uncomplicated gonorrhoea

Table 5.3 Geographical treatment areas for gonorrhoea

Type of gonorrhoea	Geographical area
Penicillin SENSITIVE	• The Kimberley, Goldfields, Midwest and Pilbara regions of WA
Penicillin RESISTANT	• All of the NT • All other areas except those mentioned above
Call your local communicable disease unit for more information	

Table 5.3 updated June 2024

Do

- If person and **all** partners for last 3 months from a geographical area with penicillin SENSITIVE gonorrhoea
  - Give **azithromycin** oral — adult 1g, single dose
  - *AND* **amoxicillin** oral — adult 3g, single dose
  - *AND* **probenecid** oral — adult 1g, single dose
  - If allergy to penicillin — **sexual health consult**
- If person and/or **any** partner for last 3 months from a geographical area with penicillin RESISTANT gonorrhoea *OR* partners unknown
  - Give **azithromycin** oral — adult 1g, single dose
  - *AND* **ceftriaxone** IM — adult 500mg, single dose mixed with **lidocaine (lignocaine) 1%**
  - If allergy to penicillin — **sexual health consult**
- If anal gonorrhoea — regardless of geographical area

- Give **azithromycin** oral — adult 1g, single dose
- *AND* **ceftriaxone** IM — adult 500mg, single dose mixed with **lidocaine (lignocaine) 1%**
- If allergy to penicillin — **sexual health consult**

- If oral gonorrhoea — regardless of geographical area
  - Give **azithromycin** oral — adult 2g, single dose
  - *AND* **ceftriaxone** IM — adult 500mg, single dose mixed with **lidocaine (lignocaine) 1%**
  - If allergy to penicillin — **sexual health consult**
- Contact trace (page 262) and give partner/s same treatment
- Offer condoms but advise better not to have sex for 7 days after person and partner/s treated
- Arrange recall for re-test in 3 months, 4 weeks if pregnant
- STI and safer sex education (page 263)
- Consider talking about contraception (page 331)

Follow-up

- Re-test in 3 months — Standard STI check (page 247)
- Check HIV and syphilis serology done

Pregnancy considerations

- Re-test after 4 weeks — send urine or low vaginal swab for NAAT
- **High priority** for contact tracing (page 262) and treatment of woman and partner/s at same time if possible

Genital herpes

- See — Genital ulcers and lumps (page 268)

Donovanosis

- Notifiable disease. Follow local protocols, check with sexual health unit if more information needed

Donovanosis sores

- Usually red, beefy, raised, raw, painless ulcer
- In early stages, small sore may look like primary syphilis
- Sores won't go away without treatment, will slowly get larger

Do

- Give **azithromycin** oral — adult 1g, once a week for 4 weeks
- Check sore/s each week when giving medicine
  - If not healed after 4 weeks — **medical consult**
  - Continue **azithromycin** oral — adult 1g, once a week until healed
  - If not improving — may need biopsy to test for cancer

- Contact trace (page 262) and give partner/s same treatment
- Offer condoms but advise better not to have sex for 7 days after person and partner/s treated
- STI and safer sex education (page 263)
- Consider talking about contraception (page 331)

Follow-up

- Check 3 months after sore/s completely healed — to make sure sore/s haven't come back

Pregnancy considerations

- **Medical consult**

Syphilis

- Notifiable disease — follow local protocols and check with sexual health unit if more information needed
- If ever had syphilis — positive result for life
  - Check for reinfection by comparing new and past results
- Syphilis is diagnosed by positive test with no history of previous treatment *OR* 4-fold (2 titre) increase in RPR level (eg 1:4 to 1:16)
  - Syphilis serology can be hard to understand. Talk with sexual health unit or syphilis register
- If pregnant — can cause miscarriage, stillbirth or congenital syphilis in baby

Primary syphilis

- 1 or 2 chancres (ulcers, usually painless) in genital and/or anal area or mouth
  - Usually red and round with firm rolled edge, base clean
- Sore goes away in 4–6 weeks without treatment but syphilis still in blood

Secondary syphilis

- Condylomata lata (fleshy, moist, wart-like lesions in genital or perianal area)
- May also have
  - Skin rashes — especially palms of hands, soles of feet
  - Patchy hair loss including outer eyebrow, beard
  - Oral lesions — ulcers, mucous patches
  - Swollen lymph glands all over body
  - Liver and/or spleen enlargement

Tertiary syphilis

- Dementia or change in personality
- Shooting pain, numbness, pins and needles
- Weakness of hands, arms, legs, abnormal gait (unusual way of walking)

- Cranial nerve palsy (problems with nerves of head and face), abnormal pupil reactions
- Deafness that is new
- Eye problems, eg retinal disease, uveitis, iritis
- Aortic incompetence (heart valve weakness)
- Dilation (widening) of ascending aorta on x-ray or echocardiogram

Do

Syphilis treatment depends on how long person has been infected. Sexual health unit or syphilis register can give history and advice on management.

- If known to be less than 2 years
  - Give **benzathine benzylpenicillin** (Bicillin L-A) IM — adult 2,400,000U/4.6mL (1.8g) (2 × 2.3mL syringes), single dose
  - If allergy to penicillin — **sexual health consult**
- If unknown or known to be more than 2 years
  - Give **benzathine benzylpenicillin** (Bicillin L-A) IM — adult 2,400,000U/4.6mL (1.8g) (2 × 2.3mL syringes), once a week for 3 weeks
  - If more than 7 days between injections — talk with sexual health unit or syphilis register. May need to start course again
  - If allergy to penicillin — **sexual health consult**
- If neurosyphilis or cardiovascular syphilis
  - Talk with specialist, sexual health unit, syphilis register
  - Usually needs to go to hospital for more tests
- Contact trace (page 262) and treat partner/s with same treatment. Very important if newly infected, get advice from sexual health unit
- Advise no sex for 7 days after person and partner/s treated
- Offer condoms, STI and safer sex education (page 263)
- Consider talking about contraception (page 331)

If recent syphilis — Jarisch-Herxheimer reaction to treatment (often harmless febrile reaction to treatment). Starts in 3–4 hours, gets better within 24 hours

- Give **paracetamol** — adult 1g, up to 4 times a day (qid)

Follow-up

- Check syphilis serology again at 3, 6 and 12 months after base line RPR and first treatment
- Advise syphilis register of treatment given and contacts — ask local PHU for number
- Contact Syphilis Register or PHU for reinfection or treatment failure if
  - RPR increases following treatment
  - RPR does not fall 4-fold and below 1:16 within 6 to 12 months

Pregnancy considerations

Medical consult — STI emergency

- If woman has had syphilis for less than 2 years — high risk of transmission to baby. Must treat woman as soon as possible
- Late latent syphilis (infection more than 12 months ago) can sometimes be transmitted to baby
- **High priority** for contact tracing (page 262) and coordinated treatment for woman and her contact/s

Trichomonas

- Notifiable disease in the Northern Territory — follow local protocols and check with sexual health unit if more information needed

Do

- Give **metronidazole** oral — adult 2g, single dose
- *OR* **metronidazole** oral — adult 400mg, twice a day (bd) for 7 days. Best for breastfeeding, take after baby fed
- Contact trace (page 262) and give partner/s same treatment
- Advise no sex for 7 days after person and partner/s treated
- Offer condoms, STI and safer sex education (page 263)
- Consider talking about contraception (page 331)

Follow-up

- Re-test in 3 months — Standard STI check (page 247)
- Check HIV and syphilis serology done

Pregnancy considerations

- If asymptomatic consider delaying treatment until after first trimester
- Treatment same as for non-pregnant women

Mycoplasma genitalium

- Treatment varies — **medical consult** or contact sexual health unit

HIV

- Notifiable disease. HIV management always directed by sexual health or infectious diseases unit
- HIV treatment can now keep people healthy and prevent transmission to others — especially if started as soon as possible
- HIV pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) are available

Do

- Follow advice from sexual health unit and local protocols where appropriate
  - Aim to start treatment early
- Continued involvement of primary care services is important — usually involves
  - Managing and monitoring antiretroviral medicines
  - Contact tracing (page 262) and management of contacts
  - STI and safer sex education (page 263)

Pregnancy considerations

- Anti-HIV treatment can
  - Keep woman healthy during pregnancy, and afterwards
  - Reduce risk of transmission to baby almost completely if started early enough
- If woman HIV positive
  - **Urgent medical consult**. **Urgent referral** to sexual health or infectious disease specialist
  - Maintain confidentiality
  - Develop comprehensive management plan
  - Provide education and support about lifestyle factors such as diet, exercise, and stopping smoking, alcohol and use of other substances
- Most women can have vaginal birth — elective caesarean section is rarely recommended
- Talk with sexual health or infectious disease specialist at PHU about individual breastfeeding plan

Non STI results

- If MC&S results report thrush (candida) or bacterial vaginosis (BV) — see Abnormal vaginal discharge (page 264)

Contact tracing

- Person initially diagnosed with infection is referred to as the index case
- All sexual partners are referred to as contacts
- If contact has a positive result they will then become an index case
- All index cases need contact tracing
- Contacts have the right to STI check and treatment
- Untreated contacts can re-infect the index and also infect other people
- Give yourself enough time to talk with person about issues
- Ensure process is kept confidential (private)
  - Contact must never be made aware of name of index
  - Do not write name of contact in index file notes
- No sex for 7 days after index and contact/s treated
- Offer condoms
- If contact treated more than 7 days after index and reinfection possible — retreat index if possible
- While contact tracing is important to manage all STIs, it is critical for syphilis, HIV and any infection during pregnancy

Contact tracing — asking about partners

- Ask about all sexual partners in last 3 months
- Explain if partner/s not treated they may get infected again and there can be serious effects of ongoing infection — miscarriages, infertility, ectopic pregnancy, babies can become sick or die
- If person prefers they can write down name/s of sexual contact/s
- Make sure you know how to find the person again if needed

Do

- Document details of contact/s (DOB or approximate age, address) using appropriate confidential process for your area
- Hand over contact information confidentially to staff member who can begin treatment of contact, as this needs to occur quickly

Contact tracing — follow-up of partners

Do

- Talk with ATSIHPs about best way/s in your community
- Tell person they have been in contact with someone who has an infection and it is best that they have both a check and treatment today
- Advise that most people with STIs don't know they have one
- STI and safer sex education (page 263)
- Do Full STI check men (STM, page 305), women (page 248)
- Treat straight away — Table 5.4 without waiting for laboratory or POC Test results — even if STI check declined

Table 5.4 Treatment of contacts

Index case infection/syndrome	Contact treatment
Gonorrhoea, chlamydia, trichomonas, syphilis	Same treatment as index
PID	Treat for gonorrhoea and chlamydia
Painful scrotum	Treat for gonorrhoea and chlamydia
HIV	Post-exposure prophylaxis (PEP) can be offered
All other conditions	See protocols for contact treatment if needed

Education

- Not needed with every sexual health check-up
- Best for people asking for test or with STI needing treatment

STI education

- What STIs are, why they matter and how to protect themself
- How you get one, signs and symptoms, asymptomatic infections
- Need to test for reinfection in 3 months
- Get STI check
  - If under 35 years — every 6 months (twice a year)
  - Straight away if they have unsafe sex, symptoms of an STI
- Important to treat sexual partners from past 3 months
  - To prevent reinfection — no sex or use condoms for 7 days after person and partners treated
- Complications of STIs
  - Infertility
  - Increased risk of HIV
  - PID in women
  - Problems in pregnancy — ectopic pregnancy, miscarriage, preterm labour, infections in newborn baby

Safer sex education

- If person has safer sex — less chance of an STI
  - Make sure they know what this means — don't just think they will know
- Safer sex is
  - Using a condom properly every time
  - *OR* having sex with just 1 partner after both have 'clear' STI check-up

Condoms

- Only contraceptive method that protects against most STIs
- Show them how to use a condom
- Offer condoms to take away, talk about where they can get more

Supporting resources

- Australian STI management guidelines for use in primary care
- Mycoplasma genitalium guidelines

Vaginal discharge

- Vaginal discharge can be normal
- Abnormal when there is an increased amount or changed colour, smell, soreness, itch
- Caused by a range of infectious and non-infectious conditions such as gonorrhoea, chlamydia, trichomonas, candida (thrush), bacterial vaginosis, atrophic vaginitis
- Less common causes include mycoplasma genitalium, herpes simplex, cancer or foreign body (eg retained tampon)
- STIs are common in women with risk factors (page 246)
- If pregnant consider ruptured membranes (page 50), intrauterine infection

Ask

- Discharge — amount, colour, smell, duration (how long)
- Itchy, sore
- Pain on passing urine. Urinary symptoms can be caused by STIs or UTIs
- Pregnant
- Last menstrual period
- Lower abdominal pain, pain deep inside with sex. If present — see Pelvic inflammatory disease (page 272)
- Other STI symptoms — swollen lymph nodes, genital lumps, ulcers, sore throat, rash, hair loss
- Sexual partner/s — male, female, other, and if any from geographical area with penicillin-resistant gonorrhoea — Table 5.5
- Foreign body (eg tampon, condom)

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- U/A , pregnancy test (page 99)

Do

- Full STI check (page 248)
- pH test if available — before putting swab into transport medium, touch sample onto pH paper (test unreliable if woman post-menopausal, semen or blood present)

- If pH 4.5 or more (high) or pH test not done — treat for trichomonas and bacterial vaginosis straight away. Do not wait for test result
  - Give **metronidazole** oral — adult 2g, single dose
  - *OR* **metronidazole** oral — adult 400mg, twice a day (bd) for 7 days. Best for breastfeeding, take after baby fed
- Contact tracing — telling partners (page 262)
- STI and safer sex education (page 263)
- Consider talking about contraception (page 331)
- Consider thrush (page 266)
- If foreign body suspected — do speculum exam (if skilled)

Do — if high risk of STI

High risk of STI— women with abnormal vaginal discharge and under 35 years

- Treat for both gonorrhoea and chlamydia. Presentations very similar, syndromic management. **Do not** wait for laboratory or POC Test results if not immediately available
- If woman and all sexual partners in last 3 months from a geographical area with penicillin SENSITIVE gonorrhoea — Table 5.5
  - Give **azithromycin** oral — adult 1g, single dose
  - *AND* **amoxicillin** oral — adult 3g, single dose
  - *AND* **probenecid** oral — adult 1g, single dose
- If woman and/or **any** sexual partner in last 3 months from a geographical area with penicillin RESISTANT gonorrhoea — Table 5.5 *OR* partners unknown
  - Give **azithromycin** oral — adult 1g, single dose
  - *AND* **ceftriaxone** IM — adult 500mg, single dose mixed with **lidocaine (lignocaine) 1%**
- If allergy to penicillin or pregnant — **medical/sexual health consult**

Table 5.5 Geographical treatment areas for gonorrhoea

Type of gonorrhoea	Geographical area
Penicillin SENSITIVE	• The Kimberley, Goldfields, Midwest and Pilbara regions of WA
Penicillin RESISTANT	• All of the NT • All other areas except those mentioned above
Call your local communicable disease unit for more information	

Table 5.5 updated June 2024

Follow-up

- Review after 1 week — test results, response to treatment and further education
- If no improvement with treatment — **medical/sexual health consult**
- If STI results positive — see STI management (page 255)
  - Check HIV and syphilis serology done
- Any woman who has had an STI is at high risk of getting more STIs
  - If positive test result, re-test in 3 months *OR* in 4 weeks if pregnant
  - Standard STI check (page 247)

Candidiasis (thrush)

- Usually caused by *Candida albicans*
- Not sexually transmitted and contact tracing not needed
- Often found in vagina without causing any problems (asymptomatic)
  - More common if pregnant, weakened immune system, diabetes, long course of broad-spectrum antibiotics
  - Only treat if causing problems
- Thrush can cause
  - Vulval itch or burning
  - White, thick curd-like discharge that sticks to vaginal walls
  - Very red inflamed vulva and vagina

Do

- Talk with woman about keeping genital area clean and dry, salt water washes and wearing cotton underwear
- Give **clotrimazole** vaginal pessary — 500mg, single dose
- *OR* **miconazole 2%** cream for 7 days
- If not better **medical consult** about **fluconazole** oral — adult 150mg, single dose.
  - **Do not give if pregnant or breastfeeding**
- If woman has diabetes try to improve blood glucose control

Follow-up

- Some women get recurrent thrush even when well. If recurrent or persistent thrush — important to check for diabetes and weakened immune system
  - BGL
  - Offer HIV serology
  - **Medical consult** about further tests. Consider Candida glabrata — arrange for MC&S
- Woman with recurrent discharge caused by thrush needs management plan in file notes to stop repeated, unnecessary treatment for STIs

Bacterial vaginosis (BV)

- Due to change in vaginal bacteria and causes high pH
- Can cause abnormal vaginal discharge and unpleasant odour
- Not sexually transmitted and contact tracing not needed
- Often found in vagina without causing any problems (asymptomatic)

Do

If MC&S result shows 'clue cells' or other findings consistent with BV *AND*

- If symptomatic
  - Give **metronidazole** oral — adult 2g, single dose
  - Make sure Standard STI check (page 247) done
- If asymptomatic *AND* not pregnant or pregnant with no history of preterm labour — **Do not** treat
- If pregnant with history of preterm labour — **medical consult** about management plan
- If still symptoms after initial single dose treatment
  - Give **metronidazole** oral — adult 400mg, twice a day (bd) for 7 days
  - Advise women to avoid douching (cleaning inside vagina)
- No follow-up needed but if symptoms persist — **medical consult**

Genital ulcers and lumps

Red Flags	
Urgent Medical Consult	**Medical Consult**
• Syphilis in pregnancy	• Any STI in pregnancy • Herpes in pregnancy

Causes

- Herpes — most common
- Syphilis
- Genital warts
- Bartholin's cyst (page 320)
- Molluscum contagiosum (STM, page 451)
- Local injury from scratching, eg scabies, lice, bad thrush
- Donovanosis — rare
- Cancer — if not better after 4 weeks — **medical consult**, may need biopsy

Ask

- How long have they had sores, are they getting worse
- Have they had sores like these before
- Are sores painful
- Do sexual partners have sores

Check

- Full STI check (page 248)
  - Type of sore — single, multiple, tender, painless, hardened
  - Enlarged lymph nodes near sores

Do

- Full STI check (page 248) must include syphilis serology *ALSO* syphilis POC Test if available
- Swab sores — NAAT for herpes, syphilis, donovanosis
- Treat straight away — **do not** wait for test results
  - If multiple recent small painful vesicles (blisters) — treat as herpes (page 270)
  - All other genital sores or ulcers — treat as syphilis and donovanosis (page 269)

- Consider discussing contraception (page 331)
- Advise that having sex before sores have healed completely may delay healing and give infection to partners
  - If no sores wait until 7 days after treatment and until partner is treated before having sex

Follow-up

- **Review** at 1 week
  - Check if symptoms resolved
  - If sores not healed, no cause found — **medical consult** and add recall for 4 week review

Syphilis and donovanosis

Do if pregnant

- **Medical consult** — this is an STI emergency

Do

- Take blood for syphilis serology **before** starting treatment for accurate baseline (pre-treatment) RPR level
- Give **benzathine benzylpenicillin (Bicillin L-A)** IM — adult 2,400,000 units/4.6mL (1.8g) (2 × 2.3mL syringes), single dose — to start treatment for syphilis
  - If allergy to penicillin — **medical consult**
- If donovanosis suspected — **sexual health consult**
- Contact tracing (page 262) — very important if you suspect new syphilis infection. Get advice from sexual health unit
- Talk about STIs and safer sex

If recent syphilis — often get harmless febrile reaction to treatment (Jarisch-Herxheimer). Starts in 3–4 hours, gets better within 24 hours

- Give paracetamol (STM, page 326) — adult 1g up to 4 times a day (qid)

Follow-up

- Review at 1 week
  - Check test results. If positive — see STI management (STM, page 309)
  - If ulcer not healing and tests negative — **medical consult** and add recall for 4 week review
  - If you suspect donovanosis but tests negative — **sexual health consult**

Genital herpes

- Herpes simplex virus (HSV) causes genital and oral herpes (cold sores)
- Antiviral treatment reduces risk of spreading infection, duration and severity of symptoms — but doesn't cure
- Lifelong risk of recurrent episodes and shedding of herpes virus
- Infection with both herpes and syphilis possible

Do

- Keep sores clean with **normal saline** washes
- Give pain relief (STM, page 326) — can put **lidocaine (lignocaine) gel** on sores
- If kidney disease — **medical consult**. May need lower doses of antivirals

First episode

Can be severe. Lasts 2–3 weeks

- Full STI check (page 248) if not done previously — must include syphilis serology
- Medicines are most helpful if blisters present for 3 days or less
  - Give **valaciclovir** oral — adult 500mg, twice a day (bd) for 5–10 days
- Review at 1 week
  - Positive herpes NAAT confirms genital herpes
  - Negative herpes NAAT does not exclude genital herpes — ask to return for another swab if sores come back

Recurrent episodes

Usually less severe. Lasts 1 week or less

- Medicines are most helpful if given before or on the first day blisters appear
  - Give **valaciclovir** oral — adult 500mg, twice a day (bd) for 3 days

OR **famciclovir** oral — adult 1g, twice a day (bd) for 1 day

- If getting sores often and/or causing a lot of trouble — **medical consult** about having tablets at home to take as soon as sores start

Do if pregnant

- **Medical/specialist consult** about management of pregnant woman if
  - First presentation of herpes in pregnancy
  - History of herpes, previously or in current pregnancy —may need prophylactic antiviral treatment
  - Woman or her partner had blood test in past showing positive herpes serology

- If first clinical episode
  - Do herpes serology
  - Give **valaciclovir** oral — adult 500mg, twice a day (bd) for 5 days
- If recurrent episode — give **valaciclovir** oral — adult 500mg, twice a day (bd) for 3 days
- If severe episode — **medical consult** to send to hospital
- Advise woman with no history of herpes but whose partner has history of herpes to avoid sex (including oral sex) in third trimester of pregnancy

At time of birth

- Women with herpes lesions need **obstetrician/gynaecology consult** about possible caesarean section
- If vaginal birth — avoid invasive foetal monitoring and instrument delivery

Genital warts

Painless, solid lumps with hard smooth surface or cauliflower-like appearance. May look like condylomata lata (secondary syphilis) (page 258)

Do not

- **Do not** treat as genital warts until secondary syphilis is excluded
- **Do not** give podophyllotoxin if woman is *OR* could be pregnant *OR* is breastfeeding

Do

- If first episode — **medical consult**
- Give **podophyllotoxin 0.5% solution** to apply twice a day (bd) for 3 days *THEN* no treatment for 4 days — repeat cycle up to 4 times
  - **Do not** use if pregnant
- Always show how to put on the medicine
  - Use cotton swab or applicator for lotion
  - Wash hands straight away
  - Only put on wart — can burn skin and cause ulcers
- If not improving — **medical/sexual health consult** about other treatments
- If pregnant or if warts are large, inside vagina or lots of warts — **medical consult**

Pelvic inflammatory disease

Inflammation of part or all of female upper genital tract usually caused by STI

- Common cause of lower abdominal pain in non-pregnant women at high risk of STIs (15–34 years). Often missed. Can cause serious problems
- In pregnancy PID can cause miscarriage and increase morbidity
- Diagnosed through clinical history and examination
- Decision to manage as PID is based on clinical assessment even if laboratory or POC Test results negative
- Always suspect if new onset lower abdominal pain and young age

Red Flags — Urgent Medical Consult

- Severe PID
- Intrauterine device (IUD) in-situ
- Pregnant
- Diagnosis uncertain

Ask and check file notes

- Age — higher risk if 15–34 years, highest risk under 25 years
- History of STIs, PID, ectopic pregnancy, urinary infections
- Recent operations on genital tract
- Recent insertion of intrauterine device (IUD)
- Recent childbirth — see Childbirth postpartum infections (page 88)
- Date and results of last STI check and cervical screening

Ask

- Abdominal pain — where, when, how long, what makes worse or better
  - Can stay as ongoing mild pain or get worse
  - Often starts with period
- Menstrual periods
  - Last normal period
  - Change — more or less bleeding, bleeding between periods, pain with period, ongoing pain
- Fever, nausea, vomiting, feeling generally unwell
- Sexually active
  - Pain deep inside when having sex
  - Bleeding after sex
- Ask about names of contacts (page 262) if possible
- Vaginal discharge — amount, colour, smell, how long
- Urinary problems — pain, frequency, blood in urine
- IUD

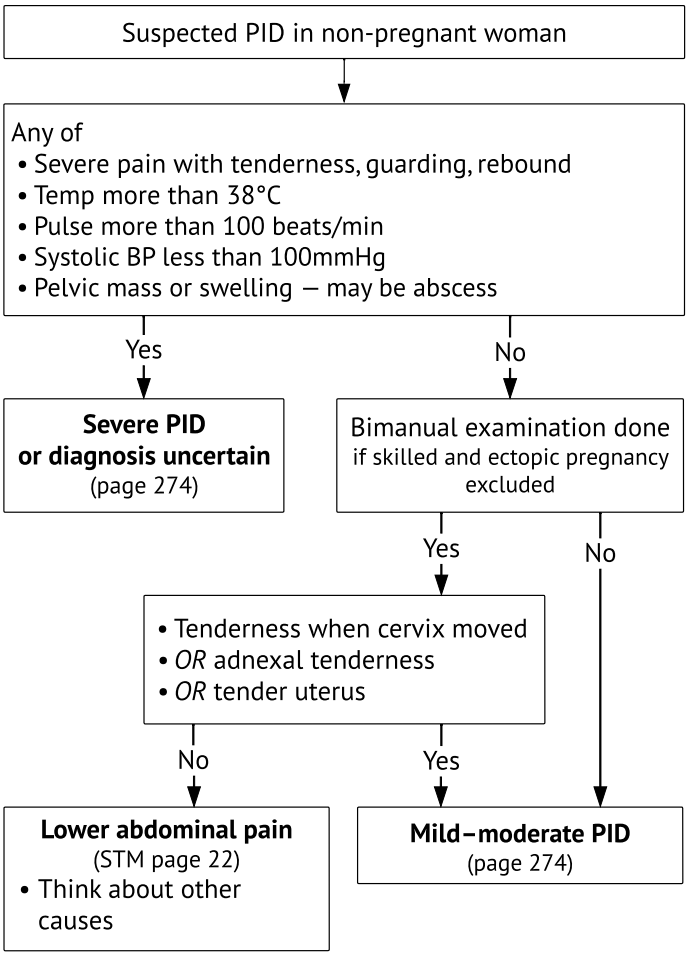
Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- If urinary symptoms or pregnant — always do midstream urine for dipstick and MC&S
- See Lower abdominal pain (STM, page 332) for other causes of pain

Do

- Full STI check (page 248)
- If pregnant — **medical consult** about diagnosis, treatment, sending to hospital
- If not pregnant — Flowchart 5.1

Flowchart 5.1 Suspected PID in non-pregnant woman



Do — if severe PID or diagnosis uncertain

- **Medical consult** send to hospital
- Do not let woman eat or drink anything — may need operation
- Put in IV cannula — largest possible, insert 2 if time
- Blood for FBC and blood culture, syphilis and HIV serology — send in with patient
- **Normal saline** 1L at 125mL/hour or as directed by doctor
- Give **ceftriaxone** IV — adult 2g, single dose. If no IV access give IM — 2 × 1g vials, each mixed with **lidocaine (lignocaine) 1%** and injected into separate buttocks, not more than 1g ceftriaxone in each buttock
  - *AND* **azithromycin** oral — adult 1g, single dose
  - *AND* **metronidazole** IV — adult 500mg, single dose
- If allergy — **medical consult**

Do — if mild–moderate PID

- If not pregnant treat and follow-up in community
- Start treatment straight away. **Do not** wait for STI results

Day 1

- Give ceftriaxone IM — adult 500mg, single dose mixed with **lidocaine (lignocaine) 1%**
- *AND* **doxycycline** oral — adult 100mg, twice a day (bd) for 14 days. Do not use if pregnant
  - *OR* **azithromycin** oral — adult 1g, single dose — second dose 1 week later
- *AND* **metronidazole** oral — adult 400mg, twice a day (bd) for 14 days
- If allergy — **medical consult**
- If pain relief needed — see Pain management (STM, page 326)
- Contact trace (page 262) and provide partner/s with treatment for gonorrhea and chlamydia — men (STM, page 309), women (page 255)
- STI and safer sex education (page 263)
- Consider discussing contraception (page 331)

Day 3

- Examine woman, ask if symptoms improving
- If improving — PID likely. Explain important to finish treatment, do contact tracing (page 262)
- If not improving — **medical consult** send to hospital

Day 8

- If using azithromycin — give **azithromycin** oral — adult 1g, single dose

Day 14

- Examine woman and ask if symptoms improving
- If still has symptoms, tenderness on abdominal or bimanual exam (do if skilled) — **medical consult**

Do also — if IUD

- **Medical consult**. Doctor should talk with gynaecologist
  - Mild PID can be managed in community without removing IUD
  - Very careful follow-up — must be seen daily for 3 days
  - If not improving — **medical consult**
- If IUD removed
  - Take 2 swabs from IUD for MC&S, NAAT for gonorrhoea, chlamydia, trichomonas
  - Put IUD in yellow-top jar and send for MC&S

Follow-up

- Check that partner/s have been treated
- If woman treated in hospital — check if follow-up needed (eg pelvic ultrasound)
- If positive test result re-test in 3 months — Standard STI check (page 247)

Follow-up if ongoing symptoms

- Check treatment and compliance (if all medicine taken)
- Check partner/s have been treated
- **Medical consult** about further testing including NAAT for mycoplasma genitalium

6. Gynaecology

Introduction — gynaecology

Women's checks can be embarrassing (shame) for many women. They may conflict with strong cultural beliefs for some Aboriginal women. Work quietly and patiently with women and your understanding of cultural issues will slowly improve. It takes time to build rapport, be patient while the women get to know and trust you. Be careful about confidentiality and privacy, and understand that many women will be very shy.

Women more likely to come in for a check if it is done in a culturally sensitive way, and they understand what it's for, why it's important, and how it's done.

Give basic information about women's issues, and use appropriate visual resources to illustrate key points (eg videos and flip charts).

In traditional culture, the genitals were not just private, but sacred, and were not even looked at or touched by birth assistants. An Aboriginal woman may need to overcome embarrassment and cultural conflicts to come to the clinic for women's health issues or tests that involve examination of the genitals. Cervical screening in particular can cause feelings of violation. Be sure to explain carefully what is involved and what they should expect, as a part of gaining informed consent.

Remember these difficulties exist for Aboriginal women, but don't be overwhelmed by potential problems. Western culture, health care, health promotion, and high rates of disease have changed some attitudes. Aboriginal women are concerned about preventing STIs, infertility, and cervical cancer. Senior women often encourage younger women to attend for contraception, cervical screening, STI checks, and antenatal care.

Talk with older women and ATSIHPs, ACWs or SWSBSC workers about the best ways to give information. One option may be to visit 'women's meetings' held for other reasons. Women often come for checks after these meetings. Talk with individual women when they come to clinic. It is important that you work with a female ATSIHP, ACW or SWSBSC worker when giving this kind of information. Check with the woman and the ATSIHP/ACW/SWSBSC worker that you have an appropriate match, as cultural issues may limit who can work together.

Talk about

- Explain the reasons for the checks. Woman may think check is only for STIs and say "I don't have a man" or "I don't need a check-up"

  - Talk about the difference between checks for STIs and screening for cervical cancer
  - Explain that Adult Health Checks also help with early detection of problems like diabetes, high BP, and kidney trouble
- Talk about the difference between coming to the clinic when they have a problem such as pain or some other symptom, and coming every 1–2 years to make sure they don't get problems

Arranging checks

When a woman is due for a check, an appropriate female practitioner should remind her. Take her aside, tell her about it in a private area, and try to make arrangements for the check. Respect the woman's privacy. Don't talk out loud about women's business if there are other people around. National cervical screening register will send reminders to the women on their list, but this may not be helpful for some women.

Aboriginal and Torres Strait Islander health practitioners

Women's checks are private business. Encourage and support female ATSIHPs to do the checks if they are trained, but be aware that skin relationships, kinship (eg avoidance relationships), or age differences may limit the scope of their work. It is important to be guided by the practitioner about how much they can be involved. They will know if the woman will let her do or help with the check.

Doing checks

Use a private women's room for the examination and discussion. Remember, the first check can take a long time to do properly. Use visual aids to make things clearer.

Involve a female ATSIHP if they are comfortable helping and the woman gives informed consent. Be careful to use a step-by-step process for gaining consent so you are sure that the woman has agreed to each part. For example, ask for consent to do the check, if the woman agrees then ask for consent to have a specific person help you. Be aware of the women's body language when she responds, to check that you have consent and not just a 'polite' agreement.

Some women can be so shy they can't go on with the examination. Their behaviour or body language may show that they are uncomfortable with the procedure. Interpret this as not having consent to continue. Stop and quietly explain things again. If the woman is still unhappy or afraid — ask her to come back when she has had time to think about it. Sometimes, seeing her after hours may be appropriate.

Breast examination

- To investigate breast problems (page 284)
- As part of Adult Health Check (STM, page 222) if over 50 years and no mammogram (page 281) in last 2 years

Ask

- Lump or change in shape or size of breast
- Change to nipple — crusting, ulcer, redness, inversion
- Nipple discharge
- Change in skin — redness, dimpling, puckering
- Unusual persistent pain especially if only in 1 breast

Do

- Show woman what lumps feel like using breast lump model if available
- Ask woman to take off shirt and bra and cover her from waist down

Look

With woman sitting up look at

- Size — normal for breasts to be a little different in shape and size, but should be about the same
- Skin — dimpling ('orange peel' appearance), ulcers, sores, rashes
- Nipples — discharge, sores, inversion (turning inward)
  - If inversion seen ask if new or always been like that

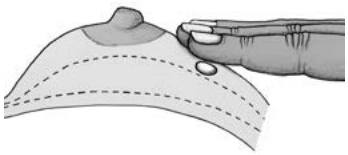


Figure 6.1

Feel

- Feel for lumps in breasts and armpit
- Careful examination should take at least 3 minutes for each breast

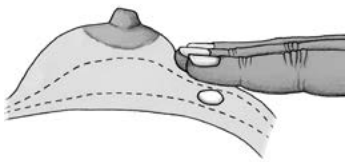


Figure 6.2

Palpate using 3 pressures

- Make 3 circles with your finger pads, increasing the level of pressure with each circle — superficial — Figure 6.1, intermediate — Figure 6.2, then deep — Figure 6.3
- With woman lying on back — ask her to put hand behind her head to flatten breast
  - If breasts very large — put pillow under same shoulder. Creates 'poached egg' effect and centralises nipple in breast

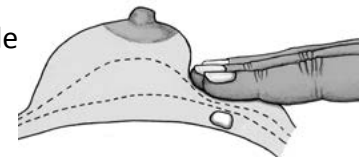


Figure 6.3

- Using the 3 pressures start in middle of axilla (armpit) and work down to bra line below breast. Work up and down in straight lines until whole breast has been checked — Figure 6.4
  - Make sure you feel carefully behind nipple — Figure 6.4
  - Repeat with other breast
- Ask woman to sit up — better position to examine axilla
  - Support woman's arm and elbow to maintain optimal relaxation
  - Using the 3 pressures, feel all 4 quadrants
  - Ask about discomfort
  - Repeat on other side
- If abnormal findings — **medical consult** — see *Breast problems* (page 284)

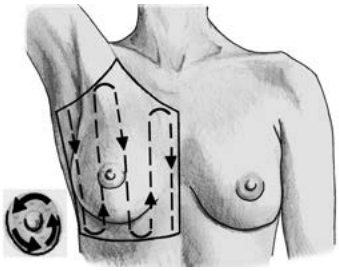


Figure 6.4

Follow-up

- Encourage woman to be aware of her breasts. What is normal for her and check for changes
- Educate about normal changes — thickening of tissue, tenderness before period
- Educate how to perform self examination
  - Look at her breasts in a mirror with arms by her side, then with arms lifted right up
  - Feel her breasts
  - If medium to large breasts — best lying down
  - If small breasts — can do in shower
- Come to clinic for a check if she finds any changes

Breast cancer — screening

- Risk of breast cancer increases with age. Most common over 50 years. Finding early can mean cancer is small, more effectively treated and less likely to have spread
- More than half of all breast cancers are diagnosed after investigating breast changes found by woman or her doctor
- BreastScreen Australia is a joint commonwealth, state and territory initiative providing free screening service to targeted groups of women

Red Flags — Urgent Medical Consult

- If woman notices new or unusual breast changes — must do breast exam even if having regular screening mammograms

Screening mammograms

- If woman is **asymptomatic** — screening mammogram Table 6.1 (page 281)
- If woman **has symptoms** — **medical consult** and diagnostic mammogram — See breast problems (page 284)

Table 6.1 Comparison of screening and diagnostic mammograms (x-rays)

Screening — asymptomatic 50–74yrs (every 2 yrs)	Diagnostic — symptoms and medical consult
• For women with **no breast symptoms**	• For **investigating signs or symptoms** in breast
• Doctor's referral not needed	• Doctor's referral needed
• Free if provided by BreastScreen service • No Medicare rebate	• Bulk billing or fee charged • Public hospitals/private x-ray clinics • Medicare rebate
• BreastScreen services notify women and doctor/health clinic of results	• Report available to doctor/health clinic
• Reminder letters sent by BreastScreen services when next mammogram due, up to 74 years	• No reminder letter sent

- Women 50–74 years — screening mammogram every 2 years
- Women 40–49 years and 75 years and over — not enough evidence to support routine screening in these groups — eligible for screening mammogram on request at BreastScreen services
- Women under 40 years — dense breast tissue in younger women makes it hard to detect changes — not eligible for screening mammograms through BreastScreen services

- Women at high risk (eg strong family history of breast cancer or ovarian cancer or known predisposing gene mutation in family) need to be screened more closely (ie more frequently and from younger age)
  - **Medical consult** about need for specialist input. May need surgeon, gynaecologist, genetics referrals
  - Online tools available to assess breast cancer risk (eg familial risk assessment (i-Prevent)

Do

- Encourage breast self-awareness
- *AND* if over 50 years and no mammogram in last 2 years do breast exam (page 279) as part of Adult Health Check (STM, page 222) encourage mammography screening
- Encourage women to come to clinic if they notice
  - Lump *OR* change in shape or size of breast
  - Change to nipple — crusting, ulcer, redness, inversion
  - Nipple discharge
  - Change in skin — redness, dimpling, puckering
  - Unusual persistent pain, especially if only in 1 breast
- Encourage routine mammogram screening for women 50–74 years

Talk with woman about screening for breast cancer

- Explain what mammogram is, why it is done, what it can show
- Many women worry about compression and pain during mammogram procedure. Reassure them that it is only momentary and mild for most women
- Important that woman tells BreastScreen service who her usual doctor or clinic is and asks for copy of results to be sent to them
- Rarely, screening mammogram needs to be repeated for technical reasons and not because abnormality was detected. Woman will be notified and asked to attend screening again
- If abnormality found — need to attend assessment clinic in major centre
  - Will have more x-rays and may have ultrasound or biopsy to make diagnosis
  - Travel assistance covers travel costs for additional investigations

Promote breast screening

- Keep local recall and reminder list for screening mammograms
- Important to notify communities of screening dates
- Talk to older women about screening mammograms
  - During Adult Health Check (STM, page 222)
  - At women's meetings
- Use resources — posters, pamphlets, information sheets
- Women's health educators can provide training and support
- Group bookings may be available. Check with BreastScreen service
- Consider group trips to town when breast screening operating
- Encourage other community organisations (eg women's centre, council) to support these initiatives
- Link women in with other services while in town

Breast problems

- Breast problems must be carefully assessed to find cause
- Use the 'triple test' approach
  - History and clinical examination
  - Imaging — breast ultrasound and mammogram (page 281)
  - Biopsy — tissue diagnosis
- Most women with breast problems do not have breast cancer
- Women of any age may present with breast problems
- Pregnancy and breastfeeding can cause lumps in breast

Ask

- Symptoms
  - Lump *OR* change in shape or size of breast
  - Change to nipple — crusting, ulcer, redness, inversion
  - Nipple discharge
  - Change in skin — redness, dimpling, puckering
  - Unusual persistent pain, especially if only in 1 breast
- When first noted
- Constant or changing
- Related to periods
- Medicines especially contraceptive pills (page 345), MRT (page 317)
- Menopause (page 315) — when periods stopped
- Pregnant
- Breastfeeding
- Number of children and breastfeeding history
- Previous breast problems and tests
- Family history of breast cancer or other cancer (eg ovary, endometrial)
- Smoking and alcohol intake

Check

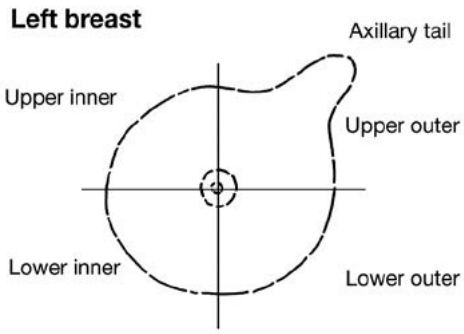
- Ask woman to show you problem area/s
- Do breast examination (page 279)
- Check lump/s
  - Position
  - Size, shape
  - Consistency (hard or soft)
  - Mobility, whether joined to skin or muscle
  - Tenderness

Do

- **Medical consult** about any woman with breast problem
- If young woman with breast tenderness, lumps, thickening before period — check again after period to see if problem has gone. If problem still present — **medical consult again**

Follow-up

- Most women with breast problem need
  - Diagnostic mammogram (breast x-ray) at hospital or radiology service (not BreastScreen Australia)
  - *AND* breast ultrasound
  - *AND* biopsy (tissue diagnosis) — may be done by radiologist at time of ultrasound or by surgeon



- On pathology request form
  - Describe breast abnormality and position
  - Request mammogram, ultrasound and biopsy
- Priority recall for **medical consult** after radiology appointment

Genital examination — female

Indicators for genital and speculum examination include

- Cervical Screening (page 297)
  - Done as population screening or follow up as per national guidelines
  - Cervical screening requires collection of HPV samples. This can be done via speculum examination or lower vaginal swab (page 292) (LVS)
- STI check
  - Done if symptomatic or as part of population screening
  - Can be done as part of speculum examination but usually by self-collected LVS (page 252)
- Investigation of vaginal bleeding — pregnant and non-pregnant women
- Assessment of pregnancy complications

Ask

- Any current vaginal bleeding
  - Encourage cervical screening (if due) even if woman has her period
  - If bleeding irregular (page 302) or symptoms of infection — important to do cervical screening now to help make early diagnosis
  - If bleeding abnormal (page 302) strongly advise speculum exam and request HPV+LBC co-test
- Menstrual history
  - Last menstrual period
  - Menstrual pattern — cycle length, duration and amount of flow, any pain
  - Any bleeding between cycles
- Vaginal discharge, itching, soreness
- Pain on passing urine
- Any urinary or faecal incontinence
- Any genital sores, rash or lump
- Lower abdominal pain or pain with sex
- Contraception — check if happy with current method, any concerns
- Sexual partner/s — regular or casual

Do

Speculum examination

- Explain and demonstrate what is involved in a speculum examination
  - Be specific. Show equipment and use pictures to explain procedure
  - Explain that the procedure should not be painful but may be uncomfortable. Woman can stop procedure at any time
  - Explain that there may be some vaginal spotting or light bleeding after procedure
  - Ask ATSIHP to help explain and translate if appropriate
- Find out whether woman would like someone with her even if practitioner female. Record whether support person present
- Ask woman to empty her bladder — if appropriate collect sample for U/A, pregnancy test, STI screen
- Inspect vulva, perineum and anal area for warts, sores, discharge, unusual skin conditions — see genital ulcers and lumps (page 268)
- **If painful unhealed sores around vaginal opening that could be genital herpes** (page 268) **— do not continue with speculum examination**
- Put in speculum and inspect vagina walls and cervix for
  - Polyps, warts, ulcers, abnormal appearance
  - Discharge — colour and amount
  - Cervicitis (inflammation of cervix) — cervix bleeds easily when touched
  - Ectropion — normal finding, red velvety area on outside of cervix extending into canal, sharp edge
- Collect cervical screening sample and STI swabs as needed — see collecting samples
- Bimanual examination if needed and skilled to perform
- Test pelvic floor muscle tone if needed
  - Ask woman to tighten muscles around your fingers for as long as she can. Muscles should lift upward
  - If muscles seem weak or slack — pelvic floor exercises (page 325)

Follow-up

- Talk with woman about coming back for results and how long results will take to arrive
- See Managing results (page 299)
- **Medical consult** about any abnormal findings

Clinician-collected samples

Swabs for STI tests

What you need

- *Aptima* swab or dry swab (flocked if available) for NAAT — labelled HVS/ECS (high vaginal swab/endocervical swab)
- 1 Amies transport medium swab for gonorrhoea culture and MC&S — labelled HVS/ECS

What you do

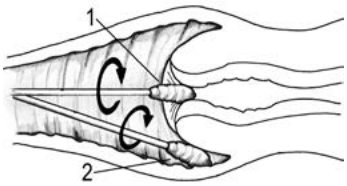


Figure 6.5

Using *Aptima*/dry swab

- Collect sample from just inside cervical canal — Figure 6.5 position 1
- *THEN* use same swab to collect sample from high (deep) in vagina (in posterior fornix below cervix) — Figure 6.5 position 2
- If using *Aptima* swab — take care not to touch swab below groove
  - Remove lid from tube and put swab in tube — Figure 6.6
  - Break off handle at groove — Figure 6.7 leaving swab in tube

Figure 6.6

- If using plain dry swab — put back into transport tube

Repeat procedure with Amies transport medium swab

- Put swab into Amies transport medium container

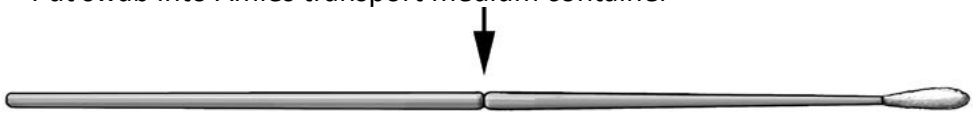


Figure 6.7

- Make sure swab containers correctly labelled, closed tightly
- Store and transport at room temperature

Request

- *Aptima*/dry swab — HVS/ECS – gonorrhoea, chlamydia, trichomonas NAAT
- Amies transport medium swab — HVS/ECS – MC&S and gonorrhoea culture

Cervical Screening

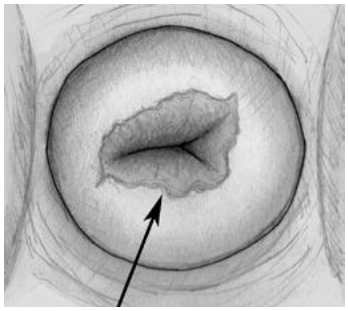
- Screening test for HPV infection and cervical changes that may lead to cervical cancer
- Cervical Screening — primary HPV test with LBC if needed

Best time to take cervical screening

- Bleeding **not** a reason to delay
- Best taken between periods and when no significant cervical infection
- For older women vaginal dryness can make taking cervical screening uncomfortable and more difficult
  - Give local oestrogen preparation for 2 weeks before screening. Will not affect the HPV test, reflex LBC cell quality will be improved
- In pregnancy
  - Best done before 24 weeks if due
  - **Medical consult** if concerned
  - Postnatal cervical screening best collected at or after 6 weeks. Can be done earlier if needed

Attention

- Need to sample cells from the cervical Transformation Zone (TZ) — where red endocervical cells change to paler ectocervical cells — Figure 6.8
  - Outside cervical canal and easily seen — usual in premenopausal women
  - Inside cervical canal and not visible — common in postmenopausal women
- Area of visible endocervical cells is called ectropion. Amount visible depends on age and hormonal status of woman



Transformation Zone

Figure 6.8

What you need

- Speculum
- Water based lubricant
- Examination light
- Liquid based cytology (LBC) vial (eg *Thinprep*, *SurePath*) labelled with woman's name, date of birth
- Choice of sampling tool/s
  - Cervix sampler 'broom' — preferred tool for cervical screening
  - Plastic spatula (**do not** use wooden spatula)
  - Endocervical brush (eg *Cytobrush*). **Do not** use in pregnancy
- Pathology request form, include indications for screening in clinical notes section of form

What you do

- Have all equipment ready and label vial before starting
- Cervical sample must include material from the transformation zone (page 289)
- Tools
  - Usually use cervix sampler 'broom', less commonly use plastic spatula and endocervical brush
  - Endocervical brush may be helpful if TZ not visible and inside the cervical canal (**do not** use in pregnancy)
- If pregnant —
  - **Do not** use endocervical brush — use broom or plastic spatula
  - *AND* any concerns about doing cervical screening (eg history of miscarriage) — **medical consult**
- **Cervix sampler (broom)** — Figure 6.9

Figure 6.9

  - Put long central bristles just inside cervical opening so shorter bristles rest on outer cervix — Figure 6.10
  - Rotate through 360° 5–6 times in same direction

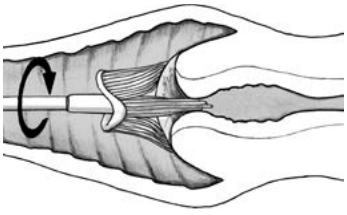


Figure 6.10

- Shorter bristles should cross TZ.
- If they dont cross TZ
  - Because of large ectropion – can use spatula as well to collect TZ and ectocervix sample

- Because TZ not visible – can use endocervical brush as well to collect TZ and endocervix sample

- **Plastic spatula** — Figure 6.11

Figure 6.11

- Rest spatula firmly on cervix with elongated end in cervical os
- Rotate through 360° twice in same direction — Figure 6.12
- Use endocervical brush as well to collect TZ and endocervix sample

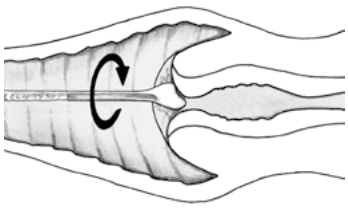


Figure 6.12

- **Endocervical brush** (eg Cytobrush) — Figure 6.13

Figure 6.13

- Put endocervical brush gently into cervical opening for ⅔ of length, with last 2 rows of bristles still seen — Figure 6.14
- Do ¼ (90°) turn of brush — may cause a little bleeding

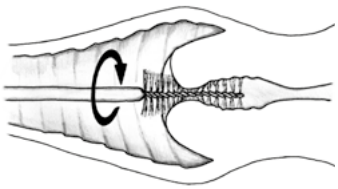


Figure 6.14

After taking sample for cervical screening

- Before removing speculum quickly transfer cervical sample from tool (broom, brush or spatula) to vial containing liquid based medium
- Agitate end of cervix sampler broom, endocervical brush or spatula in the liquid-based cytology solution — Figure 6.15
  - If using *Thinprep* — throw away instrument
  - If using *SurePath* — leave tips of broom/brush in the solution
- Tighten lid on container so marks on lid and vial meet up
- Now remove speculum

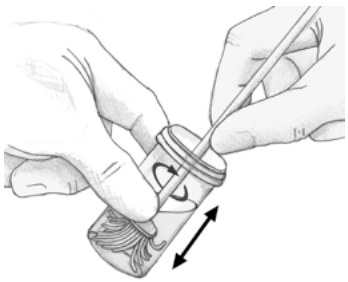


Figure 6.15

- Give information on pathology form to help interpret test eg pregnant, last cervical screen result if available, examination findings, contraception, date of last normal menstrual period, postmenopausal, taking HRT, if cervix clearly viewed
- **Test of Cure**
  - If taking cervical sample for follow-up after treatment of a HSIL abnormality — request HVP+LBC co-test. Both needed for Test of Cure
  - Include clinical indication for co-test (eg previous HSIL) and date of treatment if known
- **Abnormal bleeding at time of a cervical screening**
  - If woman has abnormal vaginal bleeding (page 302) at time cervical sample collected — request HPV+LBC co-test
  - Include clinical indication for co-test on pathology form ie abnormal bleeding

Self-collected samples

- STI check – see LVS (page 252)
- Cervical screening (page 297) – LVS sample
  - LVS samples for cervical screening can be collected by the woman or the clinician

LVS for HPV test for cervical screening

Use flocked swab (eg FLOQ) provided by laboratory. Swab must be turned multiple times to collect an adequate sample

Instructions for woman

- Take swab out of packet/container
- Put tip of swab about 2–4cm (length of 1–2 finger joint) inside vagina — Figure 6.16
  - Turn swab around vagina 6–8 times, remove
- Put swab back into packet/container
- Wash her hands, return swab to nurse or ATSIHP

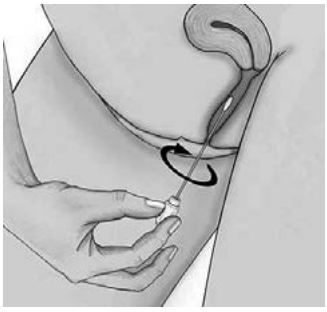


Figure 6.16

When woman returns swab

- If swab given to woman in packet — take out and put into transport medium tube
- If swab given to woman in container — make sure swab in tube and cap on
- On request form **must** write either self collected HPV test OR clinician collected HPV test
  - Give information on pathology form to help interpret test eg pregnant, last cervical screen result if available, contraception, date of last normal menstrual period, postmenopausal, taking HRT
- Make sure swab container correctly labelled, closed tightly
- Store and transport at room temperature

Supporting resources

- Cancer Council Australia national cervical cancer screening guidelines
- Self-collection instructions for a HPV test sample

Vaginal vault screening

- After total hysterectomy (operation to remove uterus including cervix) — woman may need vaginal vault screening to detect changes that can lead to vaginal cancer
- After subtotal hysterectomy (operation to remove body of uterus but not cervix) — woman needs regular cervical screening every 5 years. Risk of cervical cancer is the same as women who haven't had a hysterectomy

Red Flags — Medical Consult

Any woman with total hysterectomy who presents with
- Vaginal bleeding
- Abnormal vaginal discharge
- Vaginal pain

Deciding who should have vaginal vault screening

Check

- Type of hysterectomy
  - Total — may need vault smear see Flowchart 6.1
  - Subtotal — cervical screening (page 297)

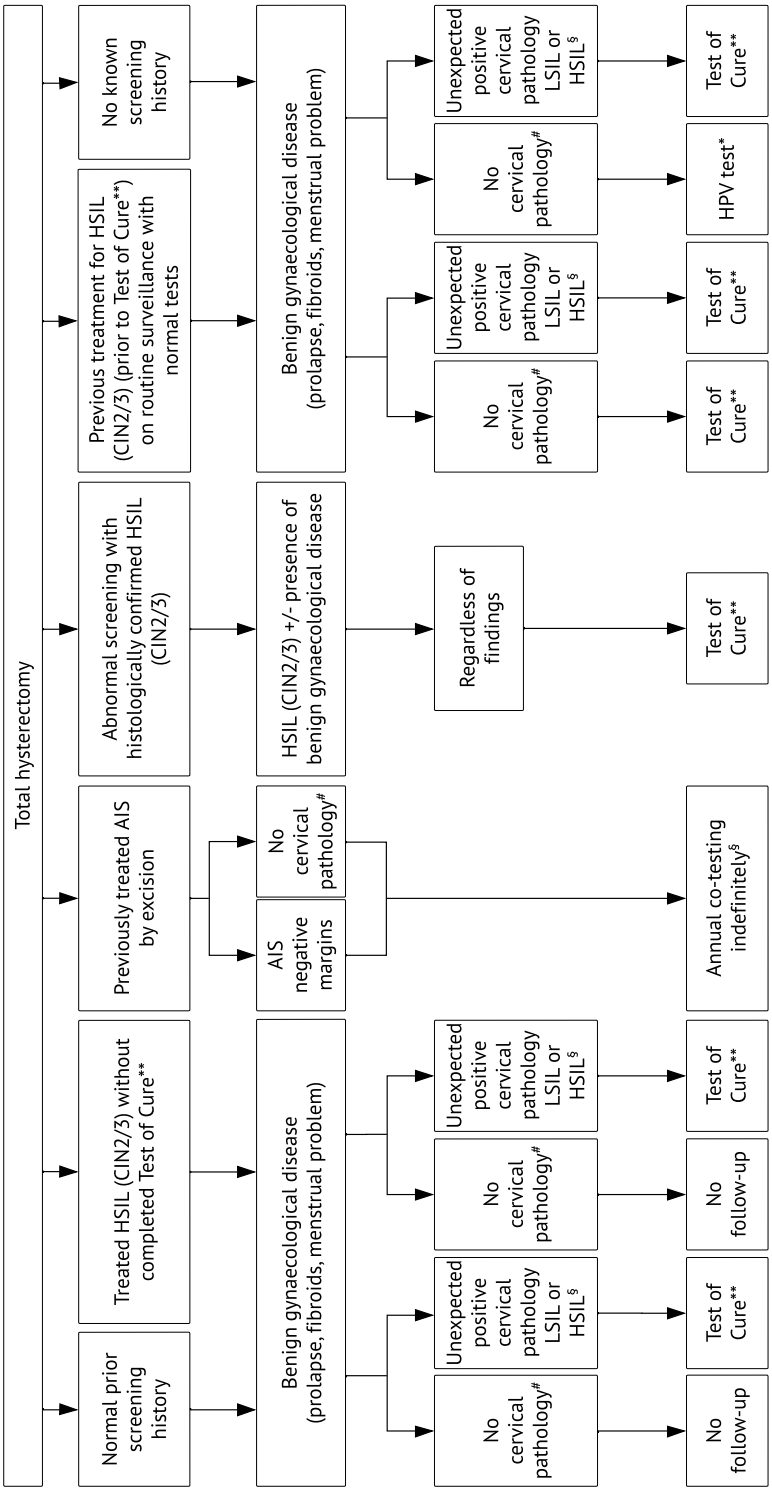
Do

- Follow Flowchart 6.1
  - First row — cervical screening history
  - Second row — indication for hysterectomy
  - Third row — cervical histopathology result
  - Fourth row — required follow-up

Women do not need vaginal vault screening if
- Total hysterectomy for benign gynaecological disease with no cervical pathology
- *AND* normal cervical screening history
- *OR* treated HSIL with completed 'Test of Cure'

Medical/gynaecology consult about need for vaginal vault screening *IF*
- Hysterectomy for non-benign condition, including HSIL (CIN 2/3), adenocarcinoma-in-situ (AIS), cervical or other genital tract cancer. Ideally, talk with gynaecologist who did hysterectomy to work out best plan for each woman
- Reason for hysterectomy not known
- Cervical screening history not known
- History of abnormal cervical screening (or Pap smear) or treatment for HSIL/AIS and/or 'Test of Cure' not completed
- History of genital tract cancer, even if not main reason for hysterectomy

Flowchart 6.1 Vaginal screening after total hysterectomy



*HPV test to be taken from the vaginal vault 12 months after treatment and annually thereafter until the woman has tested negative on 2 consecutive occasions, after which she does not need further testing
§Annual co-testing indefinitely is recommended for AIS until sufficient data becomes available that may support a policy decision that cessation of testing is appropriate
#No cervical pathology (LSIL, HSIL or AIS) found on examination of the cervix
**No further testing/follow-up after completion of Test of Cure

Doing vaginal vault screening

What you need

- Liquid based cytology (LBC) vial (eg *Thinprep*, *SurePath*) labelled with woman's name, date of birth
- Choice of sampling tool/s
  - Cervix sampler 'broom' — preferred tool
  - Plastic spatula — **do not** use wooden spatula

What you do

- Do speculum examination
- Find hysterectomy suture line on anterior vaginal wall — use cervix sampler or blunt end of plastic spatula to take sample from suture line
- If suture line not seen — take sample from end of vagina
- Continue as for cervical screening — see After taking sample (page 291)
- Take swabs for STI tests (page 288)
- If vaginal discharge — see Vaginal discharge (page 264)
- 2 tests possible depending on recommended follow-up in Flowchart 6.1
  - Usually 'Test of Cure' — request 'HPV+LBC co-test'
  - Occasionally HPV test only — request 'HPV test'
  - See Table 6.2 for more information on tests

Follow-up

- Talk to woman about coming back for results
- **Medical consult** about any abnormal findings
- If positive test result (HPV or LBC) — refer for colposcopy

Cervical cancer prevention and screening

Most cervical cancers result from human papillomavirus (HPV) infection

- HPV can also cause genital warts, cancers of anogenital tract (eg vulval cancer)
- Spread by skin-to-skin contact during sex. Very common. Most people have infection at some time, usually no symptoms and infection clears within 2 years

Red Flags — Medical consult

- Abnormal vaginal bleeding — between periods, after sex, after menopause
- Abnormal cervical appearance

HPV immunisation

- Prevents infection with 9 types of human papillomavirus (HPV)
  - Types 16 and 18 cause most cervical cancers
  - Types 6 and 11 cause genital warts
  - Best given before onset of sexual activity, before exposure to any HPV
- **HPV immunisation does not prevent all cervical cancers. Immunised women still need regular cervical screening, every 5 years**

National Cervical Screening Program

- National Cervical Screening Program supports 5-yearly HPV testing for women aged 25–74 years, dependent on woman's cervical screening history — see national guidelines
- National Cancer Screening Register records screening histories and sends reminders to women when screening is due

Cervical Screening

- Cervical screening looks for HPV infection and cervical changes that may lead to cervical cancer. Diagnosis and early treatment can prevent cancer
- Screening test is a primary HPV test (oncogenic HPV test with partial genotyping). It looks for HPV and then limited genotyping is done to look for type 16/18 HPV — see Table 6.2
- HPV test can be collected in one of two ways
  - Speculum examination of the cervix — speculum examination and sample collection enable a reflex liquid-based cytology (LBC) sample to be processed if needed. If HPV detected, the laboratory automatically performs a 'reflex' LBC on the same cervical sample. Women do not need to provide a second sample for cytology test

  - Low Vaginal Swab (LVS) - this option is now available to all women eligible for cervical screening. **LVS collection does not collect cervical cells for cytology. If HPV is detected women will need to return for speculum exam and collection of LBC**
- Laboratory provides report with HPV test result, LBC result (if performed), a 'risk' status (low, intermediate, higher risk), and a single recommendation for action. This recommendation must be interpreted in the context of the woman's cervical screening history

Table 6.2 Pathology tests — types and uses

Test requested	Specimen type	Laboratory performs	Used for
Initial tests			
HPV test (cervix)	• Clinician-collected specimen via speculum in liquid medium	• HPV and reflex LBC ▸ Laboratory does LBC if HPV test positive	• Routine cervical screening
HPV test (LVS)	• Self-collected LVS *OR* • clinician-collected or supervised LVS	• HPV test only ▸ Cytology can't be done on this specimen	• Routine cervical screening on self-collected sample
Follow-up tests - if abnormality found			
HPV+LBC co-test	• Clinician-collected specimen via speculum in liquid medium	• HPV and LBC ▸ Laboratory does LBC irrespective of HPV result	• Follow-up of women with a cervical abnormality ▸ Test of Cure for HSIL ▸ Yearly ongoing for AIS • Women with abnormal vaginal bleeding
LBC test	• Clinician-collected specimen via speculum in liquid medium	• LBC test only	• If HPV detected on LVS • Repeat unsatisfactory LBC test

Who should have cervical screening

- All women who have ever been sexually active
  - Do not start before 25 years unless woman had sexual activity under 14 years of age and was not vaccinated against HPV before start of sexual activity. Offer single cervical screen between 20–24 years of age to these women
  - Start at age 25 years and repeat every 5 years until 70-74 years
- Older women
  - If cervical screening negative — stop screening between age 70–74 years
  - Women who are 75 years or older who have never had cervical screening or have not had one in the previous five years, may request a test and can be screened
- Women who have had hysterectomy
  - Testing depends on type and reason for hysterectomy
  - See Vaginal vault screening (page 294)
- Pregnant women can be safely screened
  - Do cervical screening if due or overdue and woman likely to be difficult to follow-up postnatally. Best done before 24 weeks pregnant
  - Postnatal cervical screening best collected at or after 6 weeks. Can do earlier if needed
- Women with severely weakened immune system (eg solid organ transplant or HIV) more frequent screening recommended — see national guidelines

Managing results and recalls

- When results of screening available, talk with woman about follow-up if needed, remind her of date for next cervical screening
  - Involve ATSIHP or another person for support
  - Offer written material even if she doesn't read well, she may like to discuss with someone else
- HPV results are reported as
  - HPV not detected
  - HPV 16/18 detected
  - HPV (not 16/18) detected
- LBC results are reported as
  - Negative - normal
  - Possible pLSIL or LSIL — low -grade squamous intraepithelial lesion
  - Possible pHSIL or HSIL — high-grade squamous intraepithelial lesion
  - Abnormal glandular cells
  - Suggest invasive cancer
- Follow Flowchart 6.2 to manage results

- Timing of repeat cervical screening is important for prevention and treatment of cervical changes
  - Routine interval between cervical screens is 5 years
  - Need clinic-based local recall system (eg diary, card-based, computerised) to remind women when cervical screening is due
- **Medical consult** for all abnormal test results. May need
  - Additional tests at specified intervals
  - Colposcopy — checking cervix under magnification
  - Biopsy of suspicious areas on the cervix

Management of women with cervical screening abnormalities

- Women who have colposcopy should return from gynaecologist with clear plan for follow-up and any tests needed
  - If no clear plan — contact gynaecologist
- Women who have colposcopy and confirmed HSIL or glandular abnormality on biopsy are usually offered treatment

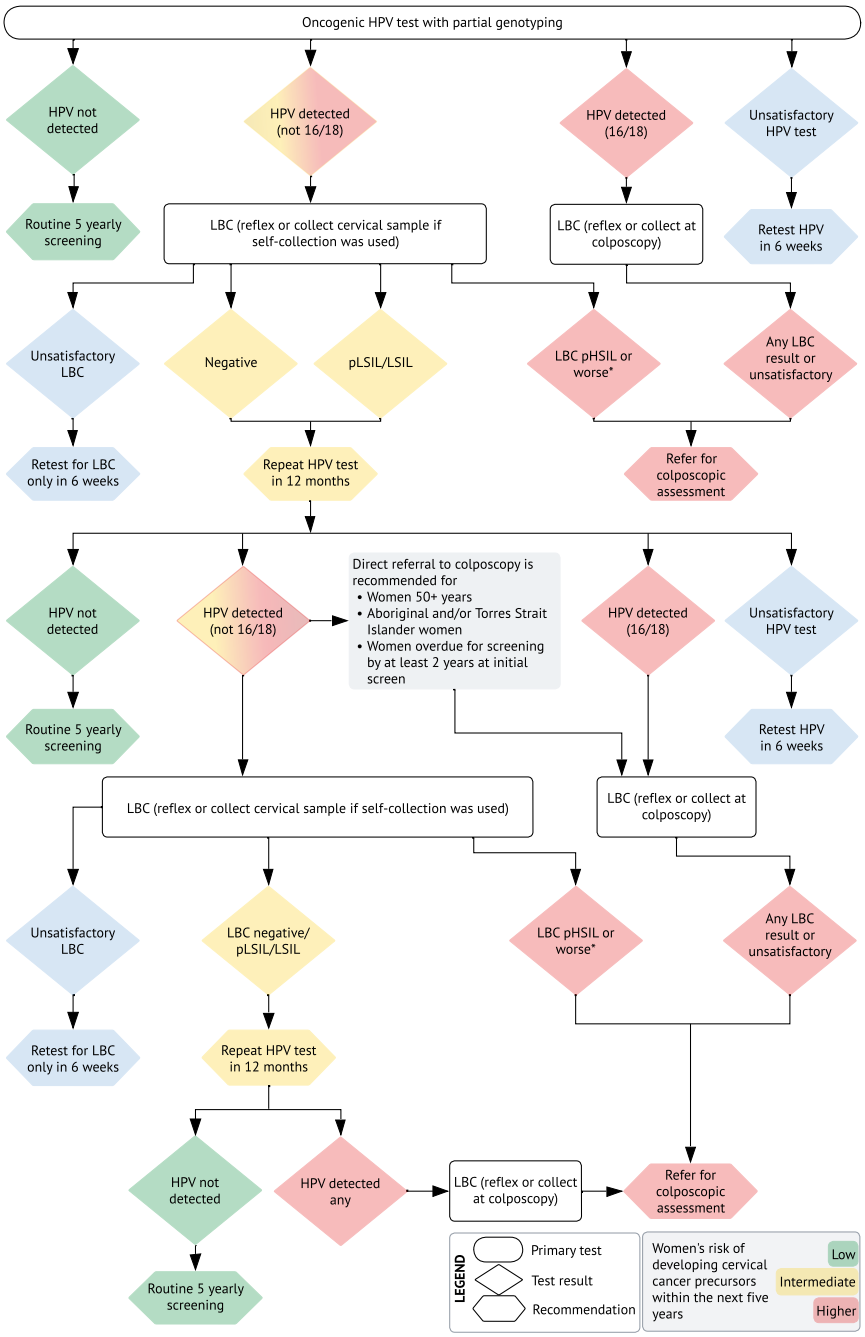
Women who have had treatment for HSIL

- Cone biopsy, LLETZ/LEEP or laser treatment for HSIL
- Follow-up by specialist at 6 months not needed unless woman is having problems (eg abnormal bleeding)
- At 12 and 24 months after treatment — cervical sample taken for HPV+LBC co-test. When used to follow-up HSIL this is also called 'Test of Cure'
  - **If both HPV and LBC negative** at 12 and 24 months — woman returns to routine 5-yearly cervical screening
  - **If HPV (16/18) detected** at any time — refer for colposcopy
- LBC result will be reported and available at time of colposcopy
  - **If HPV (not 16/18) detected** - If LBC negative or pLSIL/LSIL — repeat HPV+LBC co-test in 12 months
  - **If LBC reports pHSIL/HSIL or glandular abnormality** regardless of HPV result — refer for colposcopy

Women who have had treatment for AIS

- Cone biopsy, LLETZ/LEEP for AIS
- Follow-up by specialist at 6 months not needed unless woman is having problems (eg abnormal bleeding)
- Cervical sample taken for HPV+LBC co-test at 12 months, then yearly
  - HPV+LBC co-test repeated yearly **indefinitely**
  - If **any** abnormal test result, HPV detected or LBC abnormal — refer for colposcopy

Flowchart 6.2 Cervical screening pathway



Supporting resources

- Cancer Council Australia national cervical cancer screening guidelines
- Self-collection instructions for a HPV test sample

Abnormal vaginal bleeding in non-pregnant women

- Bleeding from
  - Uterus endometrium or uterine lining that is not a normal period
  - Cervix or vagina — **always abnormal**
- Includes
  - Bleeding between periods
  - Bleeding after sex
  - Spotting any time in menstrual cycle
  - Heavier bleeding at period or bleeding for more days than normal
  - Bleeding after menopause
  - Cycles longer than 35 days or shorter than 21 days — usually abnormal
- Normal periods usually have regular pattern and blood loss
- No periods for 3–6 months abnormal
- Bleeding from vulva, urinary tract, bowel, perineum can be mistaken for vaginal bleeding

Red Flags — Urgent Medical Consult

- Bleeding between periods, after sex or after menopause
- Shock or torrential bleeding
- Heavy bleeding lasting 7 days or more
- Heavy bright red bleeding with large clots
- Hb less than 100g/L
- Fever or abdominal tenderness/rebound
- Pain not controlled with paracetamol
- Genital tract injury
- If given birth less than 6 weeks ago or recent termination of pregnancy

Causes of abnormal vaginal bleeding (non-pregnant)

- Uterus
  - Hormone problems causing irregular ovulation and irregular periods
  - Young women soon after menarche (starting periods)
  - Older women approaching menopause
  - Endocrine disorders (eg PCOS)
  - Medicines — MRT, hormonal contraception
  - Infections — STIs, PID, endometritis after childbirth, or surgery on uterus (eg termination of pregnancy, D&C)
  - Inflammation (eg foreign body, intrauterine device IUD)

- Structural abnormalities (eg fibroids, endometrial polyps, adenomyosis)
- Medical problems (eg blood clotting problems)
- Endometrial cancer — more common in over 40 years, obesity and PCOS risk factors

- Cervix — inflammation, STI, polyps, cancer
- Vagina — inflammation, tumours, trauma
- Genital tract injury

Assessing abnormal bleeding

Do first

If life-threatening bleeding — urgent medical consult, see Heavy vaginal bleeding straight away (page 20)

- **Check for signs of shock**
  - Increased RR
  - Pulse weak and fast (more than 100bpm) or difficult to feel
  - Central capillary refill longer than 2 seconds
  - Pale, cool, moist skin
  - Restless, confused, drowsy, occasionally unconscious
  - Low BP for age or relative to person's previously recorded values
- Do urine pregnancy test if
  - Woman of child-bearing age
  - Any doubt that older woman is postmenopausal
  - If test positive — see Bleeding in pregnancy (page 33)

Ask

- Pattern of bleeding — heavy bleeding, bleeding between periods, irregular bleeding, bleeding after sex
- Medical history or check file notes
  - Cervical screening history
  - Last mammogram and breast check
  - Obstetric history
  - Serious medical problems — cancer, diabetes, thyroid problems, blood clotting problems, liver disease
  - Previous period problems, bleeding after surgery or dental extractions, postpartum haemorrhage, nose bleeds, bruising
  - Contraception — especially oral contraceptive pill (page 345), Depo-Provera (page 356), contraceptive/ENG-implant (page 350), intrauterine device IUD (page 351)

  - Previous contraceptive use — could contraceptive implant or IUD have been left in
  - Other medicines — especially blood thinners and MRT (page 318)
- Menarche (age periods started)
- Last period — how long ago, was it normal (eg right time, usual amount of bleeding)
- Usual menstrual cycle — time between periods, length of bleeding, how much blood (number of pads or tampons, soaking through clothes or bedding, passing clots)
- Changes in usual pattern of bleeding (eg spotting, between periods, after sex)
- Pain with bleeding — where, when, how severe
- If pain or heavy bleeding — ask about genital injury (eg sexual assault)
- Last unprotected sex
- Anaemia symptoms — tiredness, weakness, breathlessness
- Urine symptoms — especially blood in urine
- Bowel problems — constipation, diarrhoea, change in habit, blood in faeces

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL

Do

- POC Tests — Hb
- U/A — Pregnancy test Urine MC&S
- Head-to-toe exam — with attention to
  - Arms — check for contraceptive implant
  - Abdomen — feel for tenderness, rebound, guarding
  - Perineum — carefully check for bleeding site
- If woman has ever had sex — speculum examination (page 287) if trained
  - Inspect vagina and cervix for bleeding site
  - Do cervical screening if due — even if bleeding
  - If bleeding after sex, in-between normal periods or woman postmenopausal — collect cervical sample for HPV+LBC co-test
  - Swabs for STI check – woman (page 246), young person (page 244)
  - Check for IUD strings
  - Bimanual examination, if skilled
- If speculum examination not appropriate — collect low vaginal swabs (page 252) for STI check

- If heavy bleeding and history of bleeding problems — take blood for FBC, liver function test, thyroid function test, clotting studies (INR/APTT)
- If irregular periods — take blood for PCOS (page 312)
- If not sure woman postmenopausal — take blood for FSH and LH, oestradiol
- **Medical consult if**
  - Bleeding from site other than uterus
  - Bleeding after menopause
- Talk with doctor about need for pelvic ultrasound
  - Transvaginal preferred — gives clearer picture

Follow-up

- If abnormal uterine bleeding — ask woman to keep a bleeding chart (record of bleeding episodes)
  - **Medical consult** with results for diagnosis and management plan
- Woman with persistent bleeding after sex, bleeding in between periods or bleeding after menopause could have cervical cancer
  - Refer to gynaecologist and for colposcopy even if HPV+LBC co-test negative
  - Woman with only 1 episode of bleeding after sex doesn't need to see gynaecologist especially if cervix looks normal and HPV+LBC co-test negative
- All postmenopausal bleeding after amenorrhoea (12 months of no periods in woman of menopausal age) needs to be investigated
  - Bleeding from genital tract (uterus, cervix, vagina) in postmenopausal woman must be investigated to exclude endometrial or cervical cancer
- Women over 40 with abnormal bleeding have increased risk of endometrial and cervical cancer and will need
  - HPV+LBC co-test
  - Referral to a gynaecologist
  - Pelvic ultrasound (if cervix normal)
  - Hysteroscopy (operation to look inside uterus) and D&C (scrape inside wall of uterus) *OR* endometrial biopsy — small piece of tissue from inside uterus taken to check for cancer

Infertility

- Unable to become pregnant after 12 months of regular unprotected sex or to carry pregnancy to live birth. May be primary infertility (never pregnant) or secondary infertility (pregnant in past)
- Aboriginal traditional beliefs about conception and childbirth are spiritual and relate to the land, Aboriginal cultural stories and Aboriginal Lore. Woman and her partner may hold beliefs about infertility that are strictly traditional, a mixture of Aboriginal and western scientific beliefs or very western. Personal and cultural differences influence the approach to discussions about infertility and investigation of possible causes
- Woman and her partner both need to be assessed. Explain that assessment involves asking personal, often embarrassing questions. Check if issues should be discussed together or separately. May be better to refer male partner's to a male health staff member. Important to talk about how pregnancy happens (eg conception) and possible causes of infertility. Treatment can be difficult, expensive, involve travel to a major centre and is not always successful

Causes

Problem with reproductive system in man or woman or both. Often more than one cause

Common causes

- Woman
  - Hormonal problem — Polycystic Ovary Syndrome (PCOS) (page 312) or not ovulating regularly
  - Damaged or blocked fallopian tubes — due to Pelvic Inflammatory Disease (PID), endometriosis
  - Medical problems — diabetes, thyroid disease, kidney disease, overweight, underweight, smoking, older age
- Man
  - Hormonal problem
  - Blocked tubes
  - Not enough healthy sperm

Initial presentation

Many women present worried about not being able to fall pregnant. Only some need investigation of infertility

- Talk with woman about infertility even if couple trying to get pregnant for less than 12 months
- Do Adult Health Check (STM, page 222)
- If checks normal give reassurance and education about getting pregnant
  - Talk about healthy lifestyle, losing weight if needed, avoiding smoking (page 123) and alcohol (page 123), taking supplements
  - See her again if not pregnant after 12 months of trying
- **Medical consult** for investigation of infertility if
  - Has already been trying for 12 months
  - Checks not normal — history of PID, irregular periods
  - Ongoing medical conditions — PCOS, RHD, SLE
  - Woman 35 years or over

Investigation of infertility

Ask and check file notes

- How long she has been trying to get pregnant
- Menstrual history — last menstrual period, how often, how long, how much blood, pain with periods, age when periods started, ovulation pain, recent changes in periods
- Fertility and obstetric history — pregnancies with this partner, children from other relationships, previous investigation or treatment for infertility
- If previous pregnancies — any complications, outcomes
- Sexual history (current and previous relationships) — how often having sex, timing of sex in relation to ovulation (ovulation usually occurs 2 weeks before period), technique (full penetration), does partner ejaculate, pain with sex, lubricants used and any problems
- Gynaecological history — abnormal cervical screening results, infections (eg STI, PID, endometritis)
- Contraception — all methods ever used and any problems
- Symptoms — vaginal discharge, pelvic pain, tiredness, recent weight loss or gain, abnormal hair growth, urine problems, bowel problems, milk or discharge from nipples, headaches, visual problems
- Substance use — smoking, alcohol, other substances
- Medical problems — diabetes, kidney disease, high BP, thyroid problems, heart problems
- Operations — hysterectomy, tubal ligation, cone biopsy, termination of pregnancy, caesarean section

- Medicines — review, consider how they may affect pregnancy. **Medical consult** if not sure
- Psychological history — mood, anxiety, relationship problems, feelings about infertility and parenthood, feelings about sex, level of motivation for investigating infertility

Check

- Adult health check, if not already done
- BP, BMI, waist circumference
- Urine — collect mid-stream urine
  - U/A
  - Urine pregnancy test
- Test/s for diabetes (STM, page 246), if not already done
- Signs of PCOS (page 312)
  - Acne
  - Dark patches of skin at creases or folds (eg neck, armpit) — acanthosis nigricans
  - Hair distribution — look for male pattern (eg beard, moustache)
  - Obesity
- Check arm's for ENG-implant- look for scars, palpate
- Thyroid check — any enlargement or nodules
- Chest and heart sounds — any murmurs
- Signs of high prolactin — galactorrhoea (milk discharge from breasts)
- Abdomen (STM, page 332) — scars, tenderness, masses
- Genital exam, speculum exam if skilled — check for IUD strings
- Bimanual exam if skilled — signs of PID (page 272), masses

Do

Talk with woman about

- Managing any immediate problems
- Healthy lifestyle including weight loss if needed, reducing alcohol (page 123), stopping smoking and other drugs (page 123), taking pregnancy supplements
- Keeping record of periods (menstrual history) — ask woman to record days that she has bleeding, using either a calendar or phone app *OR* ask her to contact clinic when her period starts
- Returning for her results, more blood tests if needed
- **Medical consult** about history and findings, to develop plan of management
  - Doctor may ask you to take initial blood tests

Initial tests

Take blood, urine and swabs needed for

- Adult Health Check (STM, page 222) including full STI check (page 246)
- First antenatal visit (page 107)
- Cervical screening if due
- If recurrent pregnancy loss — swab/urine for mycoplasma and ureaplasma

Doctor may request hormone tests

- Take blood for
  - Serum FSH, LH, oestradiol (E2), prolactin, thyroid function tests
  - If excessive body hair or irregular periods — add tests for free androgen index (FAI), free testosterone, sex hormone binding globulin (SHBG)
  - May need additional tests to exclude other conditions similar to PCOS (page 312)
- If diagnosis uncertain — some blood tests may need to be repeated on day 2–3 of womans menstrual cycle
- If regular menstrual cycle — serum progesterone to check ovulation
  - Do test 7 days before next period due — day 21 for a 28-day cycle, day 28 for a 35-day cycle
  - If results inconclusive — consider repeating 1 week later
- Write date of last menstrual period (LMP) on request form so doctor can interpret results correctly

Follow-up

- **Medical consult** about results and updating management plan
- Talk with woman about
  - Test results
  - Treatment or further tests needed
  - Fertile times in menstrual cycle — Figure 6.17
  - Times when intercourse most likely to result in pregnancy
  - Keeping menstrual history
  - Ask woman to record days that she has bleeding, using calendar or phone app *OR* ask her to contact clinic when her period starts
  - Whether to continue with investigations

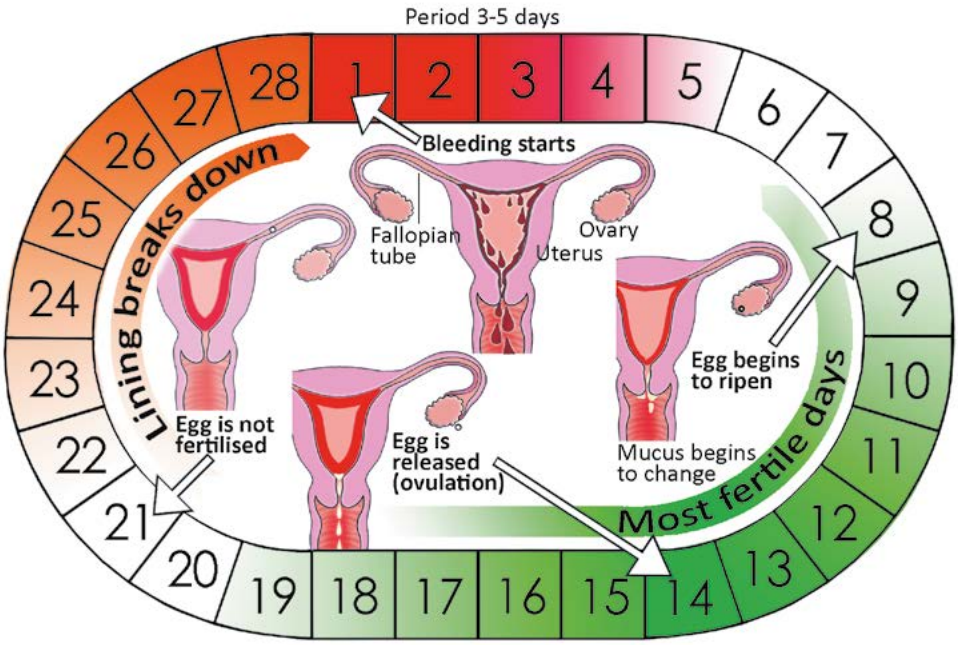


Figure 6.17

Further management

Woman

- Check that she wants to go ahead with specialist referral and management
- If so — **medical consult**
  - If PCOS — doctor may suggest metformin
  - Doctor will refer to gynaecologist
- Advise woman
  - She may see male gynaecologist
  - Ultrasound may be done — may be transvaginal
- After gynaecology appointment — may need procedure to see if problem with uterus, tubes blocked
  - X-ray with radiopaque dye (hysterosalpingogram)
  - Laparoscopy and dye test
  - Ultrasound test for tubes (hysterosalpingo contrast ultrasonography)
- May start on medicine to help her ovulate (eg metformin, clomiphene, letrozole)
  - Refer to gynaecologist for specific advice on clomiphene protocol
- Check with service provider about financial support for travel, and whether dependent on primary or secondary infertility

Male Partner

- May want to see male clinician
- Needs thorough history and examination including Adult Health Check (STM, page 222), STI check (STM, page 305), immunisations
- Key questions
  - Had children previously
  - History of testicular trauma or operations
  - Substance use, general medical health
- Semen analysis — essential even if man has fathered a pregnancy in the past
  - Specimen needs to get to laboratory within 1 hour of collection
- After these tests, reason for infertility may be diagnosed
  - Treatment depends on cause — may involve medical treatment, surgery, assisted reproduction techniques (ART)

Assisted reproduction

- Some couples need ART (eg in-vitro fertilisation (IVF))
  - Involves trips to specialist service in major centre, financial and psychological costs to couple
  - Chances of successful pregnancy in each ART cycle are about 1 in 4. Chances decrease as woman gets older — see supporting resources
  - Need referral from doctor
- Check cost of treatment with service. May be lower if both have Health Care card, but still high. All costs need to be paid in advance before any Medicare refund

Supporting resources

- Society of ART — chances of success online calculator

Polycystic ovary syndrome (PCOS)

- Complex condition affecting reproductive and metabolic health. May affect up to 20% of Aboriginal women
- Condition and symptoms result from increased androgens (male-type hormones, eg testosterone) and insulin resistance
- Features may include excessive body hair growth, scalp hair loss, acne, obesity, irregular periods, infertility
- Increased risk of cardiovascular disease, type 2 diabetes, obstructive sleep apnoea and endometrial cancer
- Affected women are vulnerable to poor mental and emotional health

Diagnosis

PCOS diagnosed if at least 2 of these present *AND* other causes excluded (eg thyroid abnormality, hyperprolactinaemia)

- Irregular or absent periods
- Evidence of elevated androgens, either
  - Clinical hyperandrogenism: excessive facial or body hair, scalp hair loss, acne
    OR biochemical hyperandrogenism: a blood test showing an increased free androgen index or calculated free testosterone or bioavailable free testosterone
- Presence of polycystic ovaries on ultrasound in a woman more than 8 years after menarche (periods starting)

Can be difficult to diagnose in adolescents or within 8 years of menarche starting — **medical consult**

Ask

- If periods irregular or absent
- Contraceptive history
- Reproductive history
- If facial or chest hair has been removed (eg by shaving or waxing)

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- U/A, pregnancy test
- Head-to-toe exam — with attention to acne and abnormal body hair

Do

- Cardiovascular risk assessment (STM, page 231) and manage accordingly
- Adult Health Check (STM, page 222)
- If not known to have diabetes — 75g OGTT or HbA1c
- Blood for total testosterone, SHBG, free androgen index (FAI), free testosterone (can't assess androgen while on hormonal contraception)
- If periods irregular or absent — take blood for TFT and prolactin to exclude other problems
- Mental health screen — higher risk of depression, anxiety
- **Medical consult** — for management of type 2 diabetes, infertility, menstrual problems
- If the person does not clearly meet criteria for PCOS doctor will organise other tests and investigations

Management

Best outcomes in PCOS are achieved with holistic and team based approach — patients with PCOS are eligible for **chronic disease management plan**

- Lifestyle intervention
  - Healthy lifestyle behaviours encouraged
  - Lifestyle interventions for high-risk groups (eg overweight/obesity, diabetes) — diet, exercise, quit smoking and behavioural strategies
  - **Medical consult** — if lifestyle interventions insufficient to meet goals
- Emotional wellbeing
  - Use a PCOS quality of life tool (eg PCOSQ, modified PCOSQ) to assess wellbeing of women with PCOS
  - **Medical consult** — if symptoms of depression, anxiety, psychosexual dysfunction, body dysmorphia or eating disorders
- Contraception — women with PCOS can conceive naturally
  - If pregnancy not wanted OR optimisation of health preconception are important — organise contraception
- Regulate periods
  - Menstrual regularity can be improved with 5–10% weight loss
  - Hormonal contraception (eg COC) can be used to achieve regular withdrawal bleeds

- **Protect against endometrial (uterine) cancer** if having less than 4 periods a year — hormonal therapy
  - Combined oral contraceptive pill (COC)
  - *OR* cyclical progesterone (eg medroxyprogesterone — not a contraceptive)
  - *OR* injectable progesterone
  - *OR* long-acting reversible contraceptives — see Long-acting reversible contraception (LARC) (page 350)
- Infertility (page 306)
  - Weight loss of 5–10% can help to restore regular ovulation and increase chances of spontaneous conception
  - Offer tubal patency testing if at risk of tubal factor infertility (eg history of STI)
  - Refer to specialist for further investigations — after 12 months of trying for pregnancy under age 35, 6 months for age 35 or more
  - Other options — surgery, assisted reproductive technology
- Excess body hair
  - Shaving and waxing can improve appearance of facial and other hair
  - Medicine, if directed by doctor, may include — oral contraceptive pill, spironolactone. **Some medicines for excess hair growth are not safe in pregnancy**
  - Other less accessible methods include electrolysis, laser or eflornithine cream (if small area affected)

Supporting resources

- International polycystic ovary syndrome guidelines

Menopause

- Menopause — when ovaries stop functioning and woman has her last menstrual period. Usually between 45–55 years — if no hysterectomy or medical treatment causing periods to stop
- Perimenopause — time leading up to menopause when a woman may experience changes in her cycle regularity, length or menstrual flow pattern
- Early menopause — when menopause occurs naturally between 40-45 years
- Postmenopause — no periods for at least 12 consecutive months
- Surgical menopause — when both ovaries have been removed
- Premature ovarian insufficiency — when menopause occurs under 40 years. May occur spontaneously, due to surgery or medical treatment

Red Flags — Urgent Medical Consult

- Vaginal bleeding occurring in postmenopausal woman

Symptoms of menopause

- Not all women are bothered by symptoms or experience the same symptoms — 20% no symptoms, 60% mild-moderate, 20% severe
- Symptoms may differ in different stages, last a short time or for years — no way to predict symptom severity or duration
- Symptoms of menopause may include physical and emotional symptoms
  - Hot flushes, night sweats
  - Weight gain
  - Aches and pains, headaches/migraines
  - Increased fatigue or wakefulness
  - Bloating
  - Sore breasts
  - Itch, dry skin, crawling feelings under skin
  - New facial hair
  - Joint/muscle aches and pains
  - Urinary symptoms
  - Vaginal dryness
  - Difficulty concentrating, sleeping, coping
  - Anxiety, irritability, low mood, mood swings
  - Low libido
  - Feeling less able to cope
  - Loss of confidence

- Not all symptoms can be attributed to menopause. They may be due to a medical problem, normal ageing or psychosocial factors. If concerning symptoms — **medical consult**

Ask

- Menstrual history
- Symptoms

Do

- Adult Health Check (STM, page 222)
- Mammogram (page 281) if due or if starting Menopausal Replacement Therapy (MRT)
- Cervical screening (page 297) if due
- Serious health problems in postmenopausal women include
  - Cardiovascular disease (STM, page 234)
  - Diabetes (STM, page 246)
  - Cancer — breast (page 281), endometrial (uterine), cervical (page 297)
  - Osteoporosis (STM, page 222)
- Explain normal life changes to older women and why they may get symptoms, what can be done to manage them
- Talk about pelvic floor exercises (page 325) — to strengthen pelvic floor muscles, improve or maintain continence
- Talk about emotional wellbeing — may need counselling or support especially if depressed or dealing with loss, grief or loneliness
- If there is concern that physical or emotional changes are signs of an illness — **medical consult**
- If under 40 years with premature ovarian insufficiency — **medical consult** for assessment and management
- If there are risk factors for osteoporosis or a fracture — **medical consult** to initiate treatment or arrange Bone Mineral Density (BMD) testing

Treatment of specific menopause problems

Hot flushes

- Lifestyle measures — keep cool, reduce intake of coffee/alcohol/spicy foods, stop smoking, aim for healthy weight, exercise regularly
- Complementary therapies
  - Hypnosis, cognitive behavioural therapies, Vitamin E
  - Traditional methods used by grandmothers or traditional healers
- Menopausal replacement therapy (MRT) — patch/gel (transdermal) or oral oestrogen with progesterone if intact uterus
- Non-hormonal therapy — SSRIs, SNRIs, Clonidine, Gabapentin/ Pregabalin if non-hormonal therapy preferred by woman or if hormonal therapy contraindicated (eg breast cancer, active liver disease, stroke)

Vaginal dryness, pain with sex

- Water-based lubricants
- Vaginal moisturisers
- Topical vaginal oestrogen or MRT

Mood changes

- Counselling, lifestyle changes, cognitive behavioural therapy
- Major depression — **medical consult**

Reduced libido

- Often needs a lot of counselling and education
- Needs support and reassurance, involve partner if appropriate
- Consider referral to appropriate services. May need MRT

Menopausal Replacement Therapy (MRT)

Do not use MRT due to increased risk of serious side effects if

- History or increased risk of hormone-dependent cancers — breast, some types of ovarian and uterine cancers
- Pre-existing or high risk of cardiovascular disease
- Previous Venous Thromboembolism (VTE) which includes Deep Vein Thrombosis (DVT) and Pulmonary Embolism (PE) or stroke

MRT is the most effective way to improve quality of life by reducing symptoms and may have other benefits for bone and cardiovascular health

- Types of MRT include
  - Oestrogen only therapy
  - Combined (oestrogen and progesterone) therapy
  - Selective oestrogen receptor modulators
  - Tibolone

- MRT may provide symptomatic relief for symptoms including hot flushes/ night sweats, vaginal dryness, joint pain and stiffness
- Systemic MRT is associated with small increase in risk of breast cancer, this is greater for combined MRT (oestrogen and progesterone) compared with oestrogen only MRT
- Transdermal (patch or gel) MRT is associated with minimal or no risk of VTE. Oral therapy is associated with low risk
- If under 60 years or less than 10 years since menopause — quality of life benefits generally outweigh risks
- Minor side effects include sore breasts, vaginal bleeding, fluid retention, nausea, headache, mood changes
- MRT is not a contraceptive

Do – Prescribing MRT

- **Medical consult**
- Must be prescribed by doctor — consider individual benefits, risks, side effects
- Prescribe at lowest effective dose for shortest time, regular (6–12 monthly) review of ongoing need
- Safest within first 5 years of menopause
- Use with care if significant risk factors for CVD, diabetes, smoker
  - If increased risk of CVD — patch better than oral MRT
- If perimenopausal — best period control by using cyclical MRT regimen, oral contraceptive pill, or oestrogen patch plus Levonorgestrel Intra Uterine Device LNG-IUD
- If postmenopausal — continuous progesterone therapy (patch or LNG-IUD) or cyclical progesterone therapy
- If women has uterus — endometrial protection with progestogen is essential
- If women has had hysterectomy — prescribe oestrogen alone
- If premature ovarian insufficiency — give MRT at least until usual age of menopause. Usually between 45–55 years — if no hysterectomy

Vulval problems

- Vulval problems include itch, pain, swelling, bleeding, ulcers, lumps, change in skin colour or texture (eg skin cracking)
- Some women do not have any symptoms or do not report them. The appearance of the vulva should be noted when the woman is examined for any another reason (eg cervical screening)
- Any woman with persistent lump, ulcer, vulval skin colour change or vulval bleeding needs referring for a **gynaecology consult** to exclude vulval cancer

Vulval itch (vulvodynia)

Can be caused by many conditions

- Candida (page 266) (thrush)
- Tinea cruris (jock itch)
- Dermatitis, psoriasis
- Lichen planus, lichen sclerosis — 3–5% risk of progressing to cancer
- Vulvar intraepithelial neoplasia (VIN), vulval cancer

Vulval lumps

- Bartholin's cyst, Bartholin's abscess
- Vulval abscesses (boils) — common in remote context
- Syphilis sores or lesions
- Sebaceous cyst
- Haematoma (collection of blood)
- Varicose veins
- Vulval cancer

Vulval pain

- Candidiasis (chronic thrush) or dermatitis with skin cracking
- Vulvodynia (can occur without visible lesion)
- STI related ulcers or lumps (page 268) (usually but not always painless)
- Trauma — laceration or abrasion

Persistent changes

- Skin changes include
  - Shiny appearance
  - Cracks
  - Colour — pale, red, pink, grey, brown
  - Raised areas, bleeding

- Shrinking of labia minora
- May be caused by
  - Lichen planus, lichen sclerosis — skin often paler
  - VIN, vulval cancer

Check

- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- U/A, pregnancy test
- Vulva and perianal area — look for changes as above

Do

- Full STI check (page 248)
- Lesion swab — viral swab for genital herpes (HSV), MC&S
- If persistent itch, pain, lump, ulcer or skin changes — **medical consult**
  - Most women need gynaecology review and may need biopsy to make diagnosis

Follow-up

- If lichen sclerosis, VIN or vulval cancer — woman needs regular gynaecology reviews
- If vulval biopsy — woman needs gynaecology review to follow-up results
- If topical corticosteroid prescribed for dermatitis or lichen sclerosis — check woman is using

Bartholin's cyst or abscess

- Bartholin's cyst — lump or swelling either side of vagina opening — Figure 6.18
- Bartholin's abscess — infected Bartholin's cyst. Infection can be due to STI or many other organisms
  - Presents as red, hot, swollen, tender — can be very painful
  - May discharge spontaneously (without squeezing or pressing)

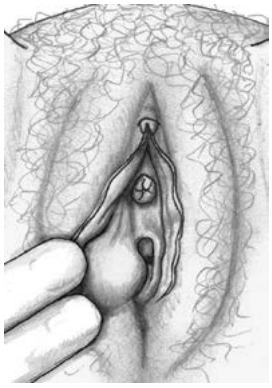


Figure 6.18

Do

- Swab and request MC&S and NAAT for chlamydia and gonorrhoea

Do — if painful cyst

- If no infection — **medical consult** to consider referral to gynaecologist for possible surgery

Do — if abscess

- **Medical consult**
- If abscess hasn't discharged — send to hospital
  - Needs operation to drain abscess, stop it recurring
  - While waiting — keep comfortable, regular pain relief (STM, page 326). May need opioids if severe pain
- If advised by doctor
  - Give **amoxicillin-clavulanic acid** oral — adult 875+125mg, twice a day (bd) for 5 days
  - *AND* **doxycycline** oral — adult 100mg, twice a day (bd) for 7 days
  - If pregnant — **medical consult**
  - If allergy to penicillin or vomits after taking medicine — **medical consult** about different antibiotic

Follow-up

- If abscess discharges — complete antibiotics
- If recurrent abscesses — refer to gynaecologist. May need operation

Urinary incontinence

- Woman and men sometimes wet themselves because they can't control when they pass urine
- Often ashamed and don't ask for help
- More common in women who have had children. Often gets worse as woman gets older, if overweight or has urinary tract infection
- Many causes and some serious
- Absorbent pads/continence aids are not treatments. Can help with symptoms but underlying cause needs to be addressed

Ask

- When did the problem start
- When does urine come out
  - All the time (dribbling)
  - Before they can get to toilet (can they hold on/urgency)
  - When they 'strain' (cough, sneeze, lift, laugh)
  - Do they wet the bed
- Do they know when it is coming out
- How many times do they go to toilet each day and at night
  - How much comes out each time — small or large amount
  - Does bladder empty completely, is it hard to pass urine or do they dribble afterwards
- Do they wear pads or similar
- Any other urine problems — pain, burning
- Is there lump coming out of vagina, or feeling of dragging/pulling — see Pelvic organ prolapse (page 324)
- How much fluid do they drink — ask about alcohol, coffee, tea, soft drink
- Pregnant
- If postmenopausal (stopped having periods)
- Any change in bowel habit (eg constipation, leakage)

Check

- Check file notes for risk factors
  - Obstetric and gynaecological history — fibroid uterus, prolapse, menopause, birth weight history, forceps deliveries, obstetric anal sphincter injury
  - Medical history — diabetes, kidney disease, COPD, medicines
- Calculate REWS — AVPU, RR, O_2 sats, pulse, BP, Temp
- Weight, BGL
- U/A, pregnancy test

- If skilled
  - Check for big bladder, pelvic masses, fistula, prolapse (page 324)
  - Check pelvic floor muscles (page 325) — does urine leak during check, when woman coughs or bears down
- If not skilled but have concerns — **medical consult**

Do

- Urine for MC&S even if U/A normal
- Screen for diabetes if not done in last 12 months
- Teach pelvic floor exercises (page 325) or refer to physio
  - If no improvement after 10 × 10 second holds for 3 months — **medical consult**

Medical consult for

- Renal tract ultrasound to check for urinary residual volume (incomplete emptying of bladder) may need to travel to major centre
- Assessment of bladder and urethra
- Gynaecologist review — may recommend
  - Topical hormone (oestrogen) therapy
  - Medicine to reduce urinary urgency
  - Surgery to stop leakage

Treat co-existing conditions

- If UTI — treat
- If diabetes — better control of blood glucose may improve symptoms
- If constipation
  - Talk about how she sits on toilet. Suggest sitting with knees higher than hips, may use footstool or squat toilet
  - Avoid pushing/straining
  - Consider referral to dietitian

Talk about

- Possible causes. Reassure them incontinence is reasonably common and treatment is available
- Reducing pressure on weak pelvic floor (page 325)
  - Stopping smoking (STM, page 294) — avoid chronic cough
  - Weight loss if overweight
- Drink more water if urine is dark
- Avoiding drinks that make her go to toilet more often (eg coffee, tea, soft drink) — try to limit to total of 3 a day

- Keeping urine volume and frequency chart for a few days
  - Tracks what she is drinking, how much/often urine passed
  - Standard charts available from continence advisor

Pelvic organ prolapse

Muscles and fascia supporting the bladder, uterus and bowel can be weakened or torn. Pelvic organ (bladder, uterus or bowel) protrudes into or out of vagina — Figure 6.19

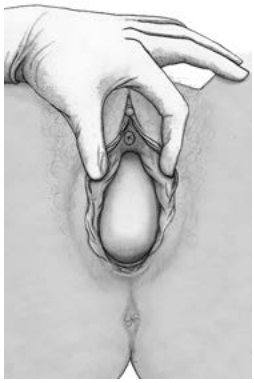


Figure 6.19

Ask

- If feels lump in vagina
- Pulling/dragging feeling in vagina
- Leaking urine, difficulty passing urine
- Constipation
- Painful sexual intercourse

Check

- If skilled — check when woman coughs or bears down
  - Does front/back vaginal wall appear as a lump at opening of vagina
  - Does urine leak
  - If cervix is coming out of vagina — severe pelvic organ prolapse

Do

- Urine for MC&S even if U/A normal
- **Gynaecologist referal** for of all women with any symptoms of pelvic organ prolapse for full assessment and discussion of treatment options
  - Treatment can include pelvic floor exercises (page 325), supportive pessary ring, surgery
- If UTI (STM, page 486) — treat
  - Do **medical follow-up** MC&S to check infection has cleared

Supporting resources

- Continence Foundation of Australia website
- Female incontinence educational video

Pelvic floor exercises

Pelvic floor muscles stretch from pubic bone in front to the base of spine at back

- Support pelvic organs — bladder, uterus, bowel
- Help control 3 openings in pelvic floor — urethra, vagina and anus

Strong pelvic floor muscles are important in

- Pregnancy — firm pelvic floor supports pregnant uterus. Pelvic floor exercises help recovery after birth
- Urine control — pelvic floor muscles weaken after having babies and getting older. Can become incontinent (page 322)
- Pelvic floor exercises can help prevent and/or control
  - Stress incontinence (losing urine when coughing, sneezing, exercising)
  - Urge incontinence (urgent need to pass urine). Urge incontinence also needs bladder training
  - Faeces control
  - Pelvic organ prolapse (page 324) — pelvic floor exercises can improve associated symptoms
- During sex — good vaginal muscle tone may increase enjoyment for woman and partner

Pelvic floor muscles can be weakened by

- Pregnancy and birth
- Constipation and straining
- Hormone changes at menopause
- Being overweight, not enough exercise/prolonged immobility
- Constant heavy lifting
- Chronic cough (eg smoker's cough)
- Ageing and loss of muscle tone

Talk with woman about

- Pelvic floor muscles — function and importance and need to exercise them
- Healthy lifestyle — healthy food, drinking enough water, physical activity (especially walking), healthy weight
- Stopping smoking (STM, page 294) — smokers more likely to develop chronic cough. Coughing puts extra pressure on weak pelvic floor

- Teach woman to identify pelvic floor muscles
  - Use drawings and models to explain, if available — Figure 6.20
- If clinician skilled and woman consents — can help women identify muscles during vaginal exam. Ask her to try and squeeze and lift around your fingers. Vagina should tighten around your fingers. Encourage multiple attempts with verbal feedback. If woman not comfortable with idea of vaginal exam she can check pelvic floor herself using her own fingers. Talk about how to identify muscles

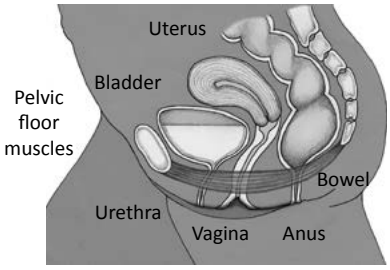


Figure 6.20

Ask woman to

- Stop dribble of urine at end of urination, feel which muscles tighten. Once she knows correct muscles, caution that repeating too often may interfere with normal bladder emptying
- Tighten ring of muscles around her anus as if she is trying to control wind but not to tighten her buttocks, hips or thighs
- Tighten and draw in muscles around anus, vagina, urethra at same time. Woman should feel as though she is lifting them up inside her
- Do 10 sets with rests in between each set (20 squeezes of the muscles) twice or even three times every day (40-60 squeezes each day)
- Increase hold each week by 1 second as able, up to 10 seconds
- If poor numeracy consider suggesting exercises for period of time (5 minutes) resting between each set and if the muscles feel tired
- Fast exercises — do 2 short strong and fast contractions (muscle tightenings). Increase gradually to 10 contractions as able
- Start doing exercises lying down with knees bent to identify right muscles. Then can do exercises while lying, sitting, standing
- Encourage woman to do both fast and slow exercises 3 times a day
- May be useful to link with regular habits to help remember to do exercises — when waking up and going to sleep, taking medicines, meal times
- If treating urinary incontinence
  - Maximum benefit achieved by 3 months of 10 × 10 second holds
  - **Medical consult** if ongoing problems

Supporting resources

- Pelvic floor muscles video
- Female pelvic floor incontinence video (Warlpiri)

Female catheterisation

- Aseptic procedure
- Check for latex allergy
- Tell person that inserting catheter will cause some discomfort

What you need

- PPE — mask, goggles, non-sterile gloves, plastic apron
- Blueys
- Sterile catheterisation or dressing pack
- Sterile gloves × 2 pair
- Normal saline for cleaning
- Urinary catheters × 2 with balloon or in/out catheters
  - Smaller the urethra the smaller the catheter
  - 12G or 14G for adults, 6–12G for younger girls
- Kelly Forceps or similar (ones in dressing pack usually too small)
- For indwelling catheter — 10mL syringe filled with sterile water and catheter drainage bag
- Sterile anaesthetic gel or water-based lubricant
- Clean dish to catch urine
- Sterile specimen jar if needed

What you do

- Lie woman on bed and put blueys under bottom. Keep upper body covered and ensure privacy
  - For obese women — a pillow under the buttocks will lift the pelvis
- Ensure good light — to be able to visualise the urethral meatus (opening) some loosely rolled gauze in the vagina will help distinguish it from the urethra
- Put on PPE, unsterile gloves, mask, goggles, plastic apron
- Lay out dressing pack and prepare equipment using non-touch technique
- Open catheter **outer packet**, drop catheter onto sterile area. **Do not** open inner plastic covering yet
- Ask woman to bend knees, feet together and let knees fall apart (support knees/legs for comfort if needed with pillows or assistant)
- Put clean dish between the legs
- Remove gloves, wash hands, put on sterile gloves
- Hold labia apart with hand 1
- With hand 2, clean genitals with cotton balls soaked in **normal saline**. Sweep down each side, repeat as needed using new cotton ball each time

- Drape inner thighs and above pubic bone with sterile towels
- Open end of inner plastic cover to expose tip of catheter. **Do not** touch tip
- Hold catheter by plastic cover, dip tip into gel or lubricant
- Hold labia apart with hand 1 so you can see opening of urethra
- With hand 2, hold catheter in forceps or by plastic cover so you don't touch it. Put into urethra — Figure 6.21
- Gently push catheter in until urine flows into collection dish
  - Push catheter in a further 2–4cm to make sure balloon is past urethra

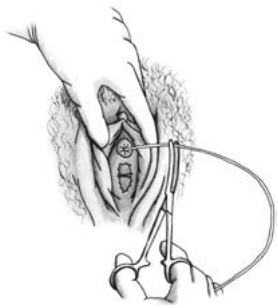


Figure 6.21

- Let about 500mL urine flow into dish, then clamp or kink catheter
  - After 5–10 minutes release and let flow finish
- Collect urine specimen if needed, do U/A
- If catheter indwelling (to stay in)
  - Fill balloon with sterile water from syringe (amount needed is written on side of catheter)
  - Withdraw catheter slightly until resistance felt
  - Connect urine drainage bag
  - Secure catheter — check it is not stretched tight when person moves
  - Monitor and report abnormal urinary output — aim for 0.5mL/kg/hr

7. Contraception

Contraceptives — names and abbreviations

Table 7.1 Contraceptive names and abbreviations

Abbreviation	Full name	Common name
ENG	Etonogestrel — type of progestogen	
LNG	Levonorgestrel — type of progestogen	
NE	Norethisterone — type of progestogen	
ECP	**Emergency contraceptive pill**	**Morning-after pill**
LNG-ECP	Levonorgestrel emergency contraceptive pill	ECP, Morning after pill
UPA-ECP	Ulipristal acetate emergency contraceptive pill (eg *EllaOne*)	ECP, morning after pill
LARC	**Long-acting reversible contraception**	
IUD	Intrauterine device	Coil
Copper IUD	Copper intrauterine device (eg *TT 380*, *Load 375*)	Coil
Depo-Provera	Depot medroxyprogesterone acetate	Depo-Provera, needle
ENG -implant	Etonogestrel implant (eg *Implanon-NXT*)	Rod, bar, stick, implanon
LNG-IUD	Levonorgestrel (hormonal) intrauterine device (eg *Mirena, Kyleena*)	Coil
Oral	**Oral contraceptives**	
COC	Combined oral contraceptive pill	Pill
POP	Progesterone-only pill	Mini pill
Other		
	Vaginal ring	
FAM	Fertility awareness methods	Billings method, Rhythm method, Natural family planning

Contraception — general principles

- Modern contraceptives help prevent, plan and space pregnancies
- Modern contraceptives are generally safer than being pregnant
- Some contraceptives help reduce period pain and bleeding problems
- Clinics and communities should promote effective contraception for all who need or want it
  - At routine check ups and consultations
  - Especially if being pregnant is risky for woman
- Consider what the woman wants from their contraception
  - Reliable prevention of pregnancy
  - Rapid return to fertility when stopped
  - Easy to use
  - Few side effects (problems), beneficial effects (eg improves acne), discrete, affordable
- Contraception is reversible. Sterilisation is permanent

Emergency contraceptive pill (ECP)

- Offer ECP (page 340) if woman
  - Had unprotected sex in the last 4 days (96 hours)
  - *AND* has no contraception
  - *OR* her contraception is late or overdue

Always offer ECP straight away it is very safe

Routine contraception check is simple, be opportunistic

Include in — STI checks for women (page 246), STI checks for young people (page 244), Cervical cancer prevention and screening (page 297), Combined checks for chronic diseases (STM, page 227), Adult Health Check (STM, page 222)

- Always do BP, BMI
- Re-check contraception risk (page 335)
- Is their contraception appropriate, consider LARC
- Ask about worries, including period problems
- Check dates of contraceptive — when is it next due

How effective are contraceptives

Long-acting reversible contraception (LARC) is the most effective.

- Etonogestrel implant (ENG-implant)
- Intrauterine devices
  - Copper IUD
  - Levonorgestrel-releasing IUD (LNG-IUD)
- If 100 women used this method for 1 year, the percentage (%) number = how many don't get pregnant. This means that
  - Using ENG-implant — only 1 out of 1000 women become pregnant each year
  - Using contraceptive pills — 7 out of 100 women become pregnant each year

Be really safe — 'double-up' with contraceptive and condoms

- Using condoms properly can prevent STIs

Table 7.2 Contraceptive effectiveness

% who don't get pregnant	Contraceptive method
99+%	ENG-implant, IUDs (LARC)
96%	Depo-Provera
93%	Contraceptive pills, Vaginal ring
88%	Condoms (female condom 79%)
80%	Withdrawal ('pulling out')
76–93%	Fertility awareness methods (eg 'rhythm method')
20%	No contraception

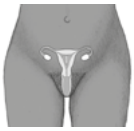
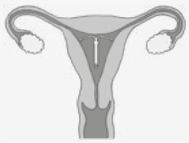
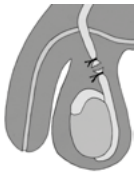
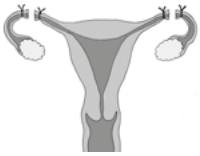
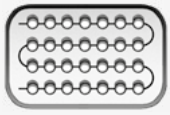
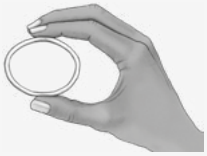
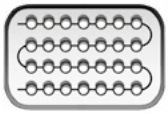
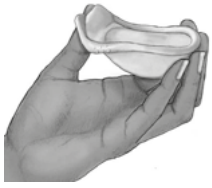
Choosing a contraceptive method

Choosing the best contraceptive method may take time — explain that you may need to ask a lot of questions

Step 1 — talk about effectiveness

- Use Table 7.3 Comparing contraceptives
- Consider
  - Risk of pregnancy occurring with a particular method compared with no contraception at all
  - Risk of pregnancy itself, including woman's physical, emotional health, safety

Table 7.3 Comparing contraceptives

Contraceptive type and features	
ENG-implant (eg *Implanon NXT*) 99.95% Lasts 3 years Highly reversible Variable bleeding patterns  **Figure 7.1**	**LNG-IUD** (eg *Kyleena*, *Mirena*) 99.7%–99.9% Lasts 5 years Highly reversible Reduces bleeding  **Figure 7.2**
Depo-Provera contraceptive injection 96% Repeat every 12–14 weeks Usually stops periods Average 6 months (and up to 18 months) to restart ovulating  **Figure 7.3**	**Copper IUD** 99.5% Lasts 5–10 years Highly reversible No hormones Periods may be heavier and last longer  **Figure 7.4**
Permanent sterilisation More than 99.5% Vasectomy Tubal ligation Tubal occlusion  **Figure 7.5**	 **Figure 7.6**
COC (Combined Oral Contraceptive) 93% 1 pill once a day Can regulate periods May improve heavy menstrual bleeding and period pain  **Figure 7.7**	**Vaginal ring** (eg *NuvaRing*) 93% Change every 4 weeks Works the same way and has same issues as COC  **Figure 7.8**
POP 93% Need to use at same time each day (within 3 hours) Unpredictable bleeding patterns (frequent and irregular bleeding common)  **Figure 7.9**	
Male condom 88% Put on before sex every time STI protection  **Figure 7.10**	**Female condom** 79% Put in before sex every time STI protection  **Figure 7.11**
Diaphragm 82% Put in before sex, leave in for 6 hours after Works better in older women No hormones No STI protection  **Figure 7.12**	

Step 2 — talk with woman about what method is practical for her

- Has she used contraception before, was the method OK
- LARC (page 350) are very convenient. Only need to visit clinic
  - Every 3 months (12–14 weeks) for Depo-Provera
  - Every 3 years for ENG-implant
  - Every 5 years for LNG-IUD
  - Every 5–10 years for copper IUD
- Would she mind feeling/seeing an implant in her arm
- Could she take a pill reliably (every day)

Step 3 — talk with woman about her bleeding patterns

- Many contraceptives change bleeding patterns (see individual methods)
  - So can STIs (eg chlamydia), pregnancy, or abnormal cervix
- At suitable time in your consult, ask about
  - Periods — timing, number days of bleeding
  - Risk of STI — offer STI check — woman (page 246), young person (page 244)
  - Recent cervical screening

If abnormal vaginal bleeding

- **Medical consult** before starting contraception if woman
  - Bleeds straight after sex
  - Bleeds in-between her normal periods
  - Has periods that aren't regular
  - Has periods that are excessively heavy/painful
- See — Abnormal vaginal bleeding in non-pregnant women (page 302)

Step 4 — exclude pregnancy

- Can exclude pregnancy if
  - No sex since last normal period
  - Negative pregnancy test and no unprotected sex in last 3 weeks
  - Day 1–5 of normal period
  - Correct and consistent use of contraception (LARC, pills, condoms)
  - Less than 21 days after birth of child
  - Less than 5 days after miscarriage or abortion
  - Urine pregnancy test (page 99) — negative test only excludes pregnancy if more than 21 days since last unprotected sex
- If unprotected sex in last 5 days (120 hrs)
  - Offer ECP (page 340)
  - See — Quick Start (page 338)
- If pregnant see — Unplanned pregnancy (page 101) or Antenatal care (page 107)

Step 5 — check woman's risk

- Always get help with working out and talking about risk
- Assessment includes
  - Contraindications
  - Risks associated with the contraception
  - Drug interactions
- For young women
  - LARC usually first line due to high fertility and need for effective contraception
  - Depo-Provera is second line due to possible impact on peak bone density
  - The COC/ring may improve cycle regulation or improve acne (common in adolescence)
  - POP can have higher failure rates in those younger than 25 compared to older users

Table 7.4 Best contraception choices for common clinical indications

Condition	Best choices	Comments	Avoid
Psychosocial issues			
Very young — under 14 years	**First choice** ENG-implant **Second choice** Depo-Provera	If they have a guardian — contact Office of Public Guardian	COC POP
• Domestic or family violence • Volatile substance use, alcohol misuse • Not a good pill-taker	LARC		COC POP
Depression	ENG-implant IUD	Depo-Provera is long lasting and can't be undone if adverse reaction	Depo-Provera
Age over 50 years			COC Depo-Provera
Common medical conditions			
Diabetes	ENG-implant IUD		COC
Diabetes — if • nephropathy • retinopathy • neuropathy • vascular disease			COC Vaginal ring
Obesity — BMI more than 35		Depo-Provera may be associated with weight gain and worsening of lipids. COC or ring contraindicated if BMI more than 35	Depo-Provera COC Vaginal ring

Condition	Best choices	Comments	Avoid
High BP	ENG-implant IUD		COC
Heart disease (AF, heart attack, stroke)	ENG-implant IUD		COC Depo-Provera
Multiple CVD risk factors / CVD / stroke			COC Depo-Provera Vaginal ring
Migraine with aura			COC Vaginal ring
Artificial heart valve	ENG-implant IUD		COC
Breast cancer			All hormonal contraception
Gall bladder disease			COC Vaginal ring
Chronic kidney disease	ENG-implant IUD		
Postnatal			
• Breastfeeding — child less than 6 months	**First choice** LARC **Second choice** POP	Need to take POP at same time every day (within 3 hours)	COC
• Not breastfeeding • Breastfeeding less than half the time	LARC	Can start COC at 6 or more weeks postnatal	
Common medicines — *that reduce effectiveness of hormonal contraception*			
Enzyme-inducing medicines, eg enzyme-inducing anti-epileptics, modafinil, bosentan, St John's wort rifampicin, rifabutin	IUD Depo		COC POP ENG-implant Vaginal ring
Lamotrigine	IUD Depo		COC POP Vaginal ring
Griseofulvin	IUD Depo		COC POP ENG-implant Vaginal ring
Antiretrovirals		Specialist advice (also check HIV drug interaction if needed)	
Common medicines — *that increase blood clot risk*			
Anticoagulants	LARC		COC
Note: Most common antibiotics, antiparasitics, antifungals do not affect hormonal contraception			

Risks with contraception

Absolute risks for hormonal contraception

- Abnormal vaginal bleeding
- Past or current breast cancer
- Liver tumour

Women with absolute risks cannot use hormonal contraception — need non-hormonal method — **medical consult**

High risks for combined hormonal contraceptives (COC and vaginal ring)

- Contraceptives containing oestrogen (including COC and vaginal ring) increase the risk of clots compared to other methods
- Blood clots are uncommon but can cause severe problems
- Rural and remote women generally have increased risk factors for clots and hormonal contraception may add to these. The more risk factors the higher the risk with hormonal contraception
- Women with risk factors for clots still need contraception — **medical consult**

Risk factors for clots

- **Do not** use contraceptives containing oestrogen (COC, vaginal ring) if woman has risk factors for clots
  - Moderate or high cardiovascular risk (STM, page 231) or multiple CVD risk factors
  - Previous stroke, heart attack, angina, AF
  - Vascular disease (eg peripheral vascular disease)
  - Mechanical heart valve or complicated valvular/congenital heart disease
  - Cardiomyopathy with impaired heart function
  - Anticoagulant use
  - Diabetes and any of — poor control (HbA1c more than 84mmol/mol [9.8%]), nerve pain (neuropathy), eye damage, kidney disease, vascular disease
  - Chronic kidney disease — stage 2 or worse
  - High BP
  - Obesity — BMI more than 30
  - Migraine with aura
  - Smoker aged 35 years or over
  - Previous venous thromboembolism (VTE) or family history of VTE — first degree relative under 45 years
  - Thrombogenic mutation (eg Factor V Leiden)
  - SLE (antiphospholipid positive)

- Over 49 years old
- Breastfeeding — less than 6 weeks after delivery (if not breastfeeding can start after 3 weeks if no risk factors for VTE)
- Organ transplant — with complications
- Immobility (eg surgery, wheelchair use)
- Current gallbladder disease (or medically treated)

Other risks with individual methods

- LARC (page 350)
- Depo-Provera (page 356)
- COC (page 345)
- ECP (page 340)
- Barrier contraception (page 342)
- Permanent sterilisation (page 359)

Quick Start — hormonal contraception

We used to wait until a period before starting contraception (day 1–5) — but some women got pregnant while waiting for their contraception

- If a woman has her usual period (day 1–5) — she is not pregnant and any type of contraception may be started and is immediately effective
- Some women do experience an implantation bleed 10-14 days after conception and confuse this with their usual period
- **Quick Start** supports starting a hormonal contraceptive method straight away. This means
  - Better chance of woman starting and understanding method
  - Less unplanned pregnancies
- Very early pregnancy can't always be excluded
  - No known problems for foetus or pregnancy from LARC (page 350), COC (page 345), POP (page 348)
  - Not recommended for quick start, IUDs or COC containing cyproterone acetate due to risk of harm to the foetus
- **Must do repeat urine pregnancy test in 4 weeks — high priority recall**

Quick Start — only 3 steps

Step 1 — exclude pregnancy

Can be confident not pregnant if

- No sex since last normal period
- Negative pregnancy test and no unprotected sex in last 3 weeks
  - **Negative urine pregnancy test only excludes pregnancy if more than 21 days since last unprotected sex**
- Day 1–5 of normal period

- Correct and consistent use of contraception (LARC, pills, condoms)
- Less than 21 days after birth of child
- Less than 5 days after miscarriage or abortion

Step 2 — start contraceptive method

- Always check BP, BMI when starting contraception — see Check woman's risk
- If pregnancy can be excluded, contraception can be started immediately
  - Explain that hormonal methods take 7 days to work so use condoms or avoid sex during this time
- If pregnancy cannot be excluded offer contraception today and explain that
  - The pregnancy test today is negative but very early pregnancy is possible
  - No known adverse outcomes on foetus or pregnancy from hormonal contraceptives
  - Hormonal methods take 7 days to work so use condoms or avoid sex during this time
  - If first choice method not available on the day — consider other effective contraceptive methods for short-term cover — Table 7.3

Step 3 — follow-up

- **Must do repeat urine pregnancy test in 4 weeks — high priority medical follow up**
- If woman pregnant at follow-up
  - Stop contraception — **medical consult**
  - See Unplanned pregnancy (page 101)
- Repeat BP, BMI

Stopping contraception

Ask why they stopped or want to stop

- If woman wants another type of contraception — Table 7.3
- If woman declining contraception or not using current method properly — tell her that risk of pregnancy is high
  - Fertility returns very quickly when stopping modern contraception — except for Depo-Provera
- Offer pre-pregnancy counselling (page 96)
  - Advise woman to consider continuing contraception until after pre-pregnancy counselling is complete

Emergency contraceptive pills (ECP)

85% effective — UPA-ECP more effective than LNG-ECP, especially days 3–5

What — 2 types of oral pill

Type — hormone
- 30mg UPA-ECP (ulipristal acetate emergency contraceptive pill)
- *OR* 1.5mg of LNG-ECP (levonorgestrel emergency contraceptive pill)

How they work
- Prevent/delay ovulation if this has not yet occurred
- Doesn't affect established pregnancy

Prescription — available over the counter, UPA more expensive than LNG

Timing
- UPA-ECP — effective up to 5 days (120 hours) after unprotected sex
- LNG-ECP — effective up to 3 days (72 hours) but may be effective for up to 4 days after unprotected sex

Fertility return — quick, next usual ovulation

Packet
- UPA-ECP — 1 × 30mg tablet
- LNG-ECP — 1 × 1.5mg tablet, depending on manufacturer

Quick Start after ECP
- UPA-ECP — no, Must wait 5 days before starting hormonal contraceptive
- LNG-ECP — yes, Can quick start hormonal contraceptive immediately

Who benefits
- Any woman who has had unprotected sex in the previous 5 days
- Safe to use in women where pregnancy is risky, high CV risk (STM, page 231)

Special issues

- **Do not use for long-term contraception**
- There are no absolute risks for using ECP, very safe to use
- If vomits within 3 hours of taking ECP — give antiemetic and repeat ECP dose
- If ECP tablets not available locally — **medical consult**
- Always consider STI check — woman (page 246), young person (page 243)

Table 7.5 Important differences between UPA and LNG

Emergency contraceptive pill	UPA-ECP	LNG-ECP
Breastfeeding	Discard milk for 7 days after taking	OK
Taking enzyme-inducing medications (including anti-epileptic medications)	**Do not** use	Give double dose (eg 2 × 1.5mg tablets)
Severe asthma treated with glucocorticoids		OK
Overweight or obese	Effectiveness may be reduced if BMI more than 26 kg/m^2 *OR* weight more than 70kg	Effectiveness may be reduced if BMI more than 30 kg/m^2 *OR* weight more than 85kg

Side effects

- May get altered vaginal bleeding for some days after use
- Uncommon (1%) — headache, nausea, vomiting

Follow-up

- **Must** do repeat urine pregnancy test in 4 weeks — **high priority recall**
- Ensure ongoing contraception and offer condoms

Barrier contraception

Condoms

- Male (external) condom — **88% effective**, cheap and available over the counter
- Female (internal) condom — **79% effective**, more expensive and available over the counter

What

- Male (external) condom — latex or non-latex sheath pulled onto erect penis
- Female (internal) condom — loose-fitting polyurethane (non-latex) sheath inside vagina or anus

How it works

- Prevents contact between eggs, sperm and some STIs
- Correct use
  - In date and stored in cool place
  - Worn and removed carefully so contents don't spill
  - Disposed of carefully after use and out of reach of children — bury or burn used condom or put in can and flatten. Don't flush down the toilet

Timing — Single use only. New one needed each time they have sex

Who benefits — men and women who want

- STI protection
- Cheap and non-hormonal contraception

Promoting condoms

- Important that condoms are easy to get without shame
- Offer condoms and talk about where they can get more
- Talk with ATSIHPs, appropriate local staff and community members about good places to supply condoms (eg shop, clinic, garage, council, club, toilets)

Special issues

Type of male (external) condoms

- Latex
- Non-latex (eg polyurethane, polyisoprene)
  - May transmit body-heat and sensation better
  - Useful if latex allergy

Lubricants

- **Do not** use oil-based lubricants — water-based or silicone-based lubricants are safe with all condoms
- Medicines used inside the vagina (eg thrush cream) are oil-based and may weaken latex or polyisoprene (rubber) condoms if used in the 72 hours prior to condom use

Negotiating use

- Men and women may feel shame to suggest or use condoms
- Women or transgender people may have little power to negotiate — try to talk about this

Condom uncomfortable

- Could be too dry — use water-based or silicone-based lubricant (only on the outside of the male condom)
- Could be latex allergy — try non-latex condoms
- Less sensitivity — try polyurethane condoms
- Check for thrush (candida) (page 266) or STI (page 246)

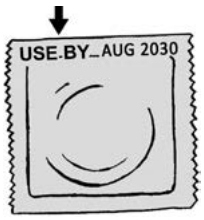


Figure 7.13

Breakage/slippage

- Check they know how to use condoms properly — see male condom demonstration
- Check use-by date and that packet is intact
- Use lubricant
- Beware of sharp fingernails/teeth
- Check size of condom
- Offer woman ECP (page 340)
- Offer both partners STI check — man (STM, page 305), woman (page 246), young person (page 243)

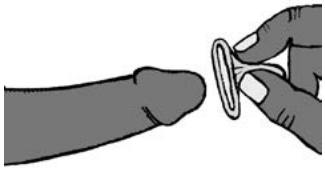


Figure 7.14

Male (external) condom demonstration

Offer to demonstrate how to use condom

- Check use-by date — Figure 7.13. Feel condom packet — should be 'squashy'. Open carefully
- Hold tip of condom, squeeze air from tip — Figure 7.14
- Roll condom onto erect penis — Figure 7.15, Figure 7.16. Show on model of penis

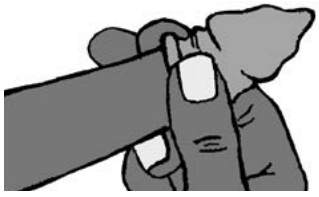


Figure 7.15

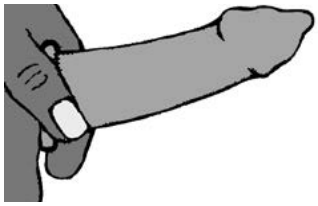


Figure 7.16

- Use water-based lubricant for anal sex or if extra lubrication needed for vaginal sex
  - **Do not** use oils or *Vaseline* — they weaken the rubber
- After man has ejaculated ('cum', passed sperm) while penis still hard, hold condom on penis and take penis out of vagina or anus slowly
- When penis soft, remove condom — Figure 7.17
- Tie knot in condom — Figure 7.18, dispose of carefully
- Wipe excess sperm from penis

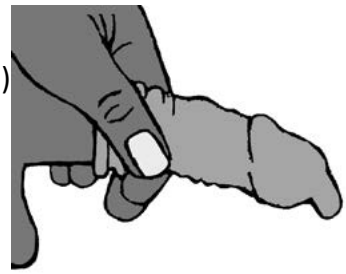


Figure 7.17

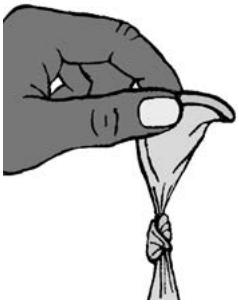


Figure 7.18

Diaphragms

82% effective

- Not commonly used by women in remote areas
- If woman would like to try a diaphragm — get help. Woman needs informed discussion with knowledgeable practitioner

What

- Dome-shaped silicone cap inserted in vagina to cover cervix (base of womb)
- One size fits about 80% of women
- Non-hormonal

How it works — prevents contact between egg and sperm if used correctly. **Does not** provide STI protection

Timing — inserted before sex, left in for 6 hours. **Do not** leave in for more than 24 hours

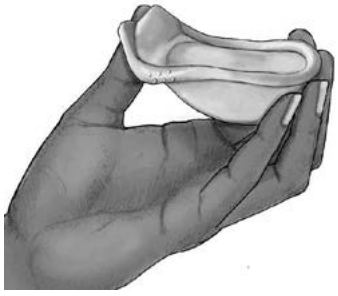


Figure 7.19

Contraceptive pills and vaginal ring

Combined oral contraceptive (COC)

93% effective

What — oral pill with oestrogen and progestogen hormones

Types — several equally effective hormone combinations, different cost and side effects

- Start woman on PBS or S100 available version — less than 35microgram ethinylestradiol with LNG or NE (see packet)

How it works — prevents ovulation. Regulates cycle with artificial periods

Prescription — must be prescribed by eligible practitioner. Some are on the PBS

Timing — 1 pill taken every 24 hours. Best taken at same time each day

Fertility return — rapid

Packet

- LNG/NE has 28 tablets
  - 21 active pills
  - *AND* 7 inactive ('sugar') pills
- Always start with active pill
- Finish 1 pack before starting next
- Some newer types of COC have more active pills (24+) and are more expensive

Suitable for Quick Start — yes, see Contraception — general principles (page 331)

- Take 1 active pill every day for 7 days to give contraception

Missed pill — Figure 7.20

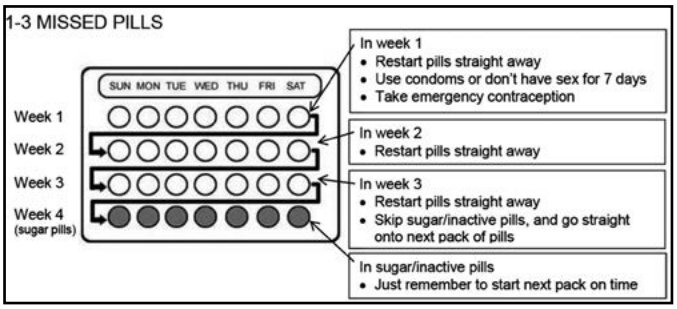


Figure 7.20

Who benefits

- Women who are good pill-takers, want period control or less pain/bleeding
- Some women find some COCs help improve acne and mood
- May be helpful for symptoms of PCOS, endometriosis, premenstrual syndrome

Do not use COC if

- Contraindications for oestrogen contraception (page 337)
- Taking medicines that reduce effectiveness of oestrogen contraception (page 335)

Special issues

Not as effective as LARC (COC 92%, LARC 99+%)

Menstruation

COC allows women to safely skip periods (by missing or reducing the inactive or 'sugar' pills)

- Skipping periods may help reduce or avoid unwanted side effects experienced with the artificial period bleed (eg headache, mood changes, period pain)
- Possible with COC with same dose per active pill — not possible on triphasic packs

Diarrhoea/vomiting

- Contraceptive effectiveness could be reduced if person vomits within 3 hours of taking COC or has severe diarrhoea for more than 24 hours
- Manage as per missed pills
- Advise no sex or use condoms until after 7 days of active pill taking (after they are better)
- Consider need for emergency contraception

Surgery

- Stop COC and switch to alternate contraception 4 weeks before major elective surgery or expected period of immobility
- **Medical consult**

Side effects

- May increase BP
- Uncommon — headache, sore breasts, mood changes, decreased sex drive, nausea, bloating, weight gain, breakthrough bleeding
- Can try different COC or alternate method — **medical consult**

Caution with clot risk

- COC causes small increase in risk of blood clot. Not first choice in people with multiple clot risks
- Use progestogen-only, LARC or non-hormonal contraception
- **Medical consult** if concerned

Follow-up

- Medical consult every year (Adult health check (STM, page 222), Combined checks for chronic disease (STM, page 227) and STI check — woman (page 247), young person (page 243)
- Always ask woman using COC about missed pills and bleeding
  - Does she know what to do if she misses a pill
  - Is this still best method for her

Vaginal ring

93% effective. Expensive

What

- Plastic ring with oestrogen and progestogen (combined hormones) similar to COC pills (eg *NuvaRing*)
- Has less frequent issues with breakthrough bleeding than COC

How it works — prevents ovulation. Regulates cycle with artificial periods

Prescription — must be prescribed by eligible practitioner. Not available on PBS and expires 4 months after dispensing

Timing — new ring inserted by woman every 3–4 weeks

Who benefits — woman wanting relative advantages of COC method but

- Unable to remember to take daily COC
- Have issues with malabsorption

Special issues

Same issues as COC

Progestogen-only pill (POP)

93% effective

What — oral pill with progestogen hormone

Type — 2 types

- LNG 30microgram
- NE 350microgram

Prescription — must be prescribed by eligible practitioner. Available on PBS

How it works

- Primary effect — thickens cervical mucus preventing sperm penetration
- Prevents ovulation in 60% of cycles. Can vary between patients

Timing — 1 pill taken at **same time** (within 3 hours) **every day**

Fertility return — rapid

Packet — 28 tablets, all identical and active. Start anywhere

Suitable for Quick Start — yes, see Contraception — general principles (page 331)

- 1 pill every day for 3 days to give contraception

Missed pill

- If more than 3 hours late — take missed pill straight away, then next pill at correct time
- Advise no sex or use condoms until 1 pill taken each day for 3 days
- Offer ECP (page 340)

Who benefits

- Women who can't tolerate or have contraindications to oestrogen in COC
- Women with high cardiovascular risk (STM, page 231)
- Breastfeeding mothers

Do not use POP if

- Contraindications for oestrogen contraception (page 337)
- Using medicines that reduce effectiveness (page 335)
- Ischaemic heart disease, stroke or transient ischemic attack (TIA) develop during use
- Breast cancer, unexplained vaginal bleeding, blood clots

Special issues

- Not as effective as LARC due to strict timing
- Some women not able to manage routine, even though it suits them in theory (eg tired breastfeeding mothers, young women)

Bleeding

- Variable
  - Frequent and irregular bleeding more common than no bleeding or prolonged bleeding

Diarrhoea/vomiting

- Only important in severe diarrhoea or if they vomit less than 2 hours after taking POP
  - If vomiting within 2 hours of taking a pill — take another pill
  - If this second pill is more than 3 hours late — advise no sex or use condoms until 1 pill a day taken for 3 days in a row (after they are better)

Side effects

- Uncommon — headaches, mood change, weight gain, breast tenderness, loss of libido, acne

Follow-up

- **Medical follow** up every year and offer regular Adult health check (STM, page 222), STI check — woman (page 247), young person (page 243)
- Always ask woman on POP about missed pills and bleeding
  - Does she know what to do if she misses a pill
  - Is it still best method for her

Long-acting reversible contraception (LARC)

Etonogestrel (ENG) implant

99.95% effective

What — Small flexible, plastic rod (40 × 2mm)

Type — hormone. Implant slowly releases progestogen (ENG)

Prescription — must be prescribed by eligible practitioner. Available on PBS

How it works — primarily prevents ovulation

Timing — lasts 3 years. Must be removed/changed before or at 3 years

Fertility return — very quick, can be within 24 hours of removal

Placement

- Simple to insert by eligible practitioner — with local anaesthetic in upper, non-dominant arm
- If arm unsuitable — **medical consult**

Suitable for Quick Start— yes see Contraception — general principles (page 331)

Who benefits — any woman needing effective and long-lasting contraception including

- Postnatal or breastfeeding
- Young women
- Women with raised cardiovascular risk (STM, page 231)

Do not use ENG-implant if

- Contraindications for oestrogen contraception (page 337)
- Using medicines reducing effectiveness (page 335)
- Ischaemic heart disease, stroke or transient ischemic attack (TIA) develop during use

Special issues

Bleeding

- Will change period cycle and bleeding
  - Most women have lighter, irregular bleeding
  - 20% have no periods
  - 25% have frequent or prolonged bleeding
- If annoying bleeding for more than 6 weeks **medical consult** — see Managing troublesome bleeding on LARC (page 358)

Side effects

- Insertion and removal may cause bruising or a scar
- Uncommon — mood change, appetite, acne, headache, weight gain
- Rare — implant moves from original placement site

Young girls

- If girl hasn't started her periods — **medical consult** to consider benefits and harms
  - Includes possible effect on peak bone mass, height, masking of delayed puberty, long term effects on future menses and fertility

Follow-up

- Set recall for change/removal
- Offer regular Adult Health Check (STM, page 222), STI check — woman (page 246), young person (page 244)

Levonorgestrel intrauterine device (LNG-IUD)

99.7–99.9% effective

What — small T shaped plastic device with hormone in stem. (*Kyleena* brand contains less hormone and is slightly smaller than *Mirena* brand)

Type — hormone. Slow-release of LNG (progestogen) into uterus
Prescription — must be prescribed by eligible practitioner. Available on PBS

How it works

- Variable effects
  - May prevent ovulation, thicken cervical mucous, thin endometrium, prevent implantation, alter egg and sperm transport

Timing

- 5 years contraception for both *Kyleena* and *Mirena*
- For women over 45 years — *Mirena* can be used for contraception until menopause
- *Mirena* can also be used for 5 years for heavy menstrual bleeding or for endometrial protection as part of MRT

Do not use LNG-IUD as an emergency contraceptive

Fertility return — very quick. Unprotected sex in the 7 days before IUD removal may lead to pregnancy

Placement — requires insertion into uterus by eligible practitioner

Suitable for Quick Start — no

- Must make sure woman is not pregnant — see Pregnancy testing (page 99)
- Schedule for insertion at appropriate time
- Consider other effective contraceptive methods (page 332) for short-term cover

Who benefits

- Any woman needing effective, long-lasting contraception
- Women with heavy or painful periods
- Women with high cardiovascular risk (STM, page 231) or other risk factors (page 337)
- Women on enzyme-inducing medications (no drug interactions)

Do not use LNG-IUD if

- Contraindications for oestrogen contraception (page 337)
- Current active cervical, uterine or pelvic infection (eg chlamydia, gonorrhoea, PID, septic abortion)
- 48 hours to 4 weeks postpartum (after birth of baby)
- Gestational trophoblastic disease
- Severe uterine distortion
- Long QT syndrome (risk of arrhythmias during insertion) or any cardiac condition where fainting would be a risk
- Endometrial cancer
- Cervical cancer awaiting treatment
- HIV with CD4 less than 200 cells/microlitre
- Ischaemic heart disease, stroke or transient ischemic attack (TIA) develop during use

Special issues

See IUD insertion, IUD removal, IUD complications

Bleeding

- Can have frequent bleeding or spotting in first 3 months. Then usually lighter, shorter or absent
- *Mirena* is more likely to cause amenorrhoea or infrequent bleeding than *Kyleena*
- If troublesome bleeding for more than 6 weeks — **medical consult** — see Managing troublesome bleeding on LARC (page 358)

Side effects

- Benign ovarian cysts
- Irregular periods
- Pain and cramps after insertion
- Uncommon — headaches, mood changes, breast tenderness, weight gain, loss of libido, acne

Follow-up

- Set recall for change/removal
- Offer regular Adult Health Check (STM, page 222), STI check — woman (page 246), young person (page 244)

Copper intrauterine device

99.5% effective

What — small plastic T- or U-shaped stem, wrapped with fine copper wire

Type — non-hormonal

Prescription — must be prescribed by eligible practitioner. Not available on PBS

How it works

- May stop sperm moving to the upper genital tract
- Affects egg survival
- Prevents implantation

Timing

- *Load 375* and *TT380 Short* brands effective for 5 years. *TT380 Standard* brand effective for 10 years
- Can be used as emergency contraception up to 5 days (120 hours) after unprotected sex
  - 99% effective
  - Not affected by obesity or liver-enzyme inducing medication
  - Insertion as emergency contraception may not be practical or accessible

Fertility return — very quick. Unprotected sex in the 7 days before removal may lead to pregnancy

Placement — needs insertion into uterus by eligible practitioner

Suitable for Quick Start — no

- Must ensure not pregnant — see Pregnancy testing (page 99)
- Schedule for insertion at appropriate time
- Consider other effective contraceptive methods (page 332) for short-term cover

Who benefits

- Any woman needing effective long-lasting contraception without hormones, especially useful if hormone-related risks
- Those on enzyme-inducing medications (no drug interactions)

Do not use copper IUD if

- Unexplained abnormal vaginal bleeding
- Current active cervical, uterine or pelvic infection (eg chlamydia, gonorrhoea, PID, septic abortion)
- 48 hours to 4 weeks postpartum (after birth of baby)
- Gestational trophoblastic disease
- Severe uterine distortion
- Long QT syndrome (risk of arrhythmias during insertion) or any cardiac condition where fainting would be a risk
- Endometrial cancer
- Cervical cancer awaiting treatment
- HIV with CD4 less than 200 cells/microlitre
- Severe thrombocytopoenia (very low platelet levels)
- Allergic to copper
- Wilson's disease

Special issues

See IUD insertion, IUD removal, IUD complications

Bleeding

- Menstrual bleeding is usually heavier and lasts longer
- Breakthrough bleeding may occur in the first months of use
- May improve with time

Side effects

- Bleeding changes, some period cramps

Follow-up

- Set recall for change/removal
- Offer regular Adult Health Check (STM, page 222), STI check — woman (page 246), young person (page 244)

IUD management

IUD insertion

Preparation

- Usually inserted in clinic
- Before insertion
  - STI check — woman (page 246), young person (page 244)
  - Presumptive treatment for STI (page 250) recommended if under 25 years
  - Cervical screening (page 297) up to date
  - Check that woman is not pregnant — see Pregnancy testing (page 99)
- Make appointment to put in at appropriate time. Consider other effective contraceptive methods (page 332) for short-term cover
- Advise when IUD will start working

Follow-up

- Inserter usually organises to review 1–6 weeks after insertion
- After this
  - Advise to feel for threads after each period. If not felt — see Lost threads
  - Set recall for change/removal

IUD removal

- Removed by eligible practitioner — by gently pulling on IUD threads
  - Minimal discomfort
- Rapid return to fertility
  - If not wanting pregnancy — advise no unprotected sex for 7 days prior to removal
  - If wanting pregnancy — see Pre-pregnancy counselling (page 96)
- Advise nothing in vagina for 48 hours (eg sex, tampons, swimming)

IUD complications

Lost threads

- If threads can't be felt/seen
  - When were they last felt/seen
  - Pregnancy test (page 99)
  - Offer ECP (page 340), talk with woman about starting extra, reliable contraception
  - **Medical consult** for ultrasound (and x-ray if IUD not seen on ultrasound)

PID or STI

- **Do not** remove device straight away
  - Mild infections responding to treatment in 48–72 hours do not require IUD removal
  - If severe infection — **urgent medical consult**
- See PID (page 272) or STI management for women (page 255)

Contraceptive injection (Depo-Provera or Depo-Ralovera)

96% effective

What — deep IM injection

Type — hormone. 150mg long-acting depot medroxyprogesterone acetate (progestogen)

Prescription — must be prescribed by eligible practitioner. Available on PBS

How it works
- Primary effect — prevents ovulation
- Secondary effect — thickens cervical mucus

Timing — injection every 12–14 weeks

Fertility return — may be slow. Average 6 months, may be up to 18 months

Placement
- Smaller women — give in buttock
- Larger women — give in deltoid (buttock fat may reduce absorption)
- **Do not** rub injection site

Suitable for Quick Start — yes, see Contraception — general principles (page 331)

Who benefits
- Women who want longer lasting hormonal contraception without an implant or IUD
- Women who want no periods or reduced bleeding
- Women who want a discrete method of contraception
- Women on enzyme-inducing medicines

Do not use Depo-Provera if

- Contraindications for oestrogen contraception (page 337)
- Multiple risk factors for cardiovascular disease (eg older age, smoking, diabetes, hypertension, obesity)
- High BP with vascular disease
- Heart attack, angina, stroke, transient ischemic attack (TIA)
- Age over 50 years
- Severe thrombocytopoenia (very low platelet levels)
- Caution if low bone density or at risk of low bone density

Special issues

Bleeding

- At first irregular, prolonged or frequent bleeding is common
- 50–70% women have no periods after 1 year
- If irregular or heavy bleeding causes trouble — **medical consult** — see Managing troublesome bleeding on LARC

Fertility return

- Can't be reversed once given, but will wear off after about 3 months
- If pregnancy wanted in next 12–18 months — consider changing method

Side effects

- Weight gain
  - 10% increase in body weight in around 20% of users
  - Use with care in obese adolescents
- Bone density
  - Can be reduced, recovers when Depo-Provera stopped
  - Use with care if under 18 years or over 45 years
  - Check calcium and vitamin D intake, encourage weight bearing exercise
- Uncommon — headache, mood, decreased sex drive, acne, breast tenderness

Follow-up

- Talk with woman about next injection date and set recall
- Check for any new contraindications
- Annual Adult Health Check (STM, page 222), STI check (page 246)
  - Review risk of low bone density, CVD

Late/missed Depo-Provera injections

- Only late if more than 14 weeks since last injection
- If late consider risk of pregnancy (eg if unprotected sex since the last injection was due)
- Do pregnancy test (page 99)
  - If positive — provide pregnancy options, antenatal counselling
  - If negative — consider emergency contraception if unprotected sex in the last 5 days and restarting ongoing contraception
- If women wants to restart Depo-Provera today — see Starting contraception — Quick Start (page 338)

Managing troublesome bleeding on LARC or Depo-Provera

- Exclude other causes — see Abnormal vaginal bleeding in non-pregnant women (page 302)
- Reassure woman that it isn't harmful
- Try medicines
  - COC taken continuously or cyclically for 3 months, if no contraindications
  - **Mefenamic acid** oral — adult 500mg, 2–3 times a day (bd–tds) for 5 days, if no contraindications to NSAIDs
  - **Levonorgestrel POP** — 30microgram, twice a day (bd) for 20 days
- If bleeding heavy — **tranexamic acid** oral — adult 1g, 3 times a day (tds) for 5 days
- If medicines don't work
  - Early removal and replacement of ENG-implant or LNG-IUD
  - Shorten interval between Depo-Provera injections to 10 weeks
  - Try a different contraception method

Permanent contraception

Sterilisation does not protect against sexually transmitted infections (STIs)

Female sterilisation

99.5% effective

What

- Tubal ligation — applying clips or cutting/tying/cauterising tubes
- Tubal occlusion — blocking tubes with metal spring
  - Not commonly available — **medical/specialist consult**
- Salpingectomy — removal of the fallopian tubes
  - Requires **gynaecologist consult**

How it works — prevents egg reaching uterus/sperm and beginning a pregnancy. Periods continue

Timing

- Considered permanent (although there is a risk of failure with tubal ligation)
- Effective immediately but need reliable contraception right up to the time of the procedure

Operation

- Tubal ligation done by specialist in hospital under general anaesthetic
  - Day surgery — laparoscopy (2–3 small incisions on the abdomen)
  - If very overweight — laparotomy (single longer cut on the abdomen), longer hospital stay
  - During caesarean section
- Tubal occlusion done by hysteroscopy

Reversal — not widely available, specialist consultation to determine suitability, significant cost, requires further surgery, IVF may be recommended due to partner factors, reversal not an option if salpingectomy is done

Complications of operation — rare. Include anaesthetic risk, bleeding, infection, damage to adjacent structures

Preparation — negative pregnancy test, cervical screening (page 297), STI check (page 246) up to date

Special issues

Talk about

Considered to be permanent form of contraception — reversal may not be available and should not be relied upon — may need more than one discussion.

Remember: LARC are as effective as female sterilisation, especially ENG-implant (page 350) and IUD (page 351) and are reversible

- Does not stop or affect menstruation
- Good option for women unable to use or tolerate hormonal medicine
- Failures can happen even many years after the procedure — if pregnancy occurs after sterilisation there is an increased chance of having ectopic pregnancy (pregnancy outside the uterus) — can cause dangerous internal bleeding
- How she might feel later if a child died or she had a new partner
- Regret is higher in women who
  - Are younger (under 30 years)
  - Have no children
  - Are having an abortion or caesarean operation
  - Are having relationship difficulties

Male sterilisation

99.98% effective. Easiest and most effective sterilisation method

What — vasectomy. Cutting, clipping and/or cauterising the vas deferens (sperm tube)

How it works — prevents sperm reaching the vas deferens

Timing

- Considered permanent
- Takes at least 3 months (20 ejaculations) to clear supply of sperm. Effective contraception needed until then

Operation — simple, done by doctor/specialist under local anaesthetic

Reversal — expensive (thousands of dollars) and may not be successful

Complications — rare. Include bleeding, infection, swelling. Discomfort and bruising pain-relief (STM, page 326), ice pack and wearing supporting underwear

Positives

- Does not affect sex drive, erections or cum
- No long-term health issues

Preparation — STI check up to date

Special issues

Talk about

- This is permanent — may need several discussions
- How he might feel later if a child died or he had a new partner

8. Reference section

Clinical observations

Approximate normal physiological ranges

Temperature (°C)

- Oral — 36.5–37.5
- Axillary (under arm) — 36–37
- Rectal — 37–37.8
- Tympanic (in ear) — 36.8–37.8

Remember

- Non-touch thermometers are screening tools only and not for clinical use
- Tympanic temperature is unreliable if ear drum is not intact, is scarred or ear canal contains pus, wax or debris

Table 8.1

Age	Weight	Pulse Normal range	RR	BP systolic
Newborn	3.5 kg	120–185 beats/min	25–60 breaths/min	60–95* mmHg
3 months	6 kg	115–180 beats/min	25–60 breaths/min	60–105* mmHg
6 months	8 kg	110–180 beats/min	20–55 breaths/min	75–105* mmHg
1 year	10 kg	105–180 beats/min	20–45 breaths/min	70–105* mmHg
2 years	12 kg	95–175 beats/min	20–40 breaths/min	70–105* mmHg
4 years	15 kg	80–150 beats/min	17–30 breaths/min	75–110* mmHg
6 years	20 kg	75–140 beats/min	16–30 breaths/min	80–115 mmHg
8 years	25 kg	70–130 beats/min	16–30 breaths/min	80–115 mmHg
10 years	30 kg	60–130 beats/min	15–25 breaths/min	85–120 mmHg
12 years	40 kg	65–120 beats/min	15–25 breaths/min	90–120 mmHg
14 years	50 kg	60–115 beats/min	14–25 breaths/min	90–125 mmHg
16 years	60 kg	60–115 beats/min	14–25 breaths/min	90–130 mmHg
17 years+	65 kg	60–115 beats/min	14–25 breaths/min	90– 135 mmHg
*BP for children under 4 years are not reliable and difficult to measure				

Royal Children's Hospital (2020) Acceptable ranges for physiological variables

Antibiotics doses table

Seek a **medical consult** for medicine use in pregnancy or breastfeeding
Contact your closest Pregnancy Drug Information Centre for more information on using medicines when a woman is pregnant or breastfeeding

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† = other strengths and forms available. Doses in brackets (mL, tab) only apply to forms and strengths listed. Doses (mL) rounded up to nearest 0.2ml unless this is more than 10% above recommended dose

Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years and over	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Aciclovir† Tab: 200mg, 200mg (disp), 800mg Susp: (4mg/mL)# Pregnancy: **B3** – safe to use Breastfeed: safe to use	Chickenpox Shingles	Oral 5 times a day	20mg/ kg/dose	66mg (17mL)	124mg (32mL)	152mg (40mL)	180mg (45mL)	240mg (61mL)	320mg (81mL or 1½ tab – *200mg*)	400mg (101mL or 2 tab – *200mg*)	500mg (126mL or 2½ tab – *200mg*)	640mg (161mL or 3½ tab – *200mg*)	800mg (200mL or 1 tab – *800mg*)	# **Mix** 200mg dispersible tablet in 50mL water to give 4mg/mL solution. Mix well and use straight. If weakened immune system – increase dose. If kidney disease – decrease dose.
Albendazole† Tab: 200mg Pregnancy: **D** - **do not** use Breastfeed: appears safe	Hookworm Threadworm	Oral Single dose		N/A		200mg (1 tab – *200mg*)	400mg (2 tab – *200mg* or 1 tab – *400mg*)							Tablets can be chewed or crushed. **Do not give** to children under 6 months or females who are in first trimester of pregnancy without **medical consult**
	Strongyloides Whipworm	Oral Once a day for 3 days												
Amoxycillin† Susp: 50mg/mL Cap: 500mg Pregnancy: **A** – safe to use Breastfeed: safe to use	Nose bleed	Oral 3 times a day (tds)	15mg/ kg/dose	49.5mg (1mL)	93mg (2mL)	114mg (2.4mL)	135mg (2.8mL)	180mg (3.6mL)	240mg (4.8mL)	300mg (6mL)	375mg (7.6mL)	480mg (9.6mL)	500mg (10mL or 1 cap)	
	Otitis media	Oral Twice a day (bd)	25mg/ kg/dose	82.5mg (1.8mL)	155mg (3.2mL)	190mg (3.8mL)	225mg (4.6mL)	300mg (6mL)	400mg (8mL)	500mg (10mL or 1 cap)	625mg (12.6mL)	800mg (16mL)	1g (20mL or 2 cap)	
	Pneumonia	Oral Twice a day (bd)	35mg/ kg/dose	115.5mg (2.4mL)	217mg (4.4mL)	266mg (5.4mL)	315mg (6.4mL)	420mg (8.4mL)	560mg (11.2mL)	700mg (14mL)	875mg (17.6mL)	1g (20mL or 2 cap)	1.5g (30mL or 3 cap)	
	Endocarditis prevention	Oral Single dose	50mg/ kg/dose	165mg (3.4mL)	310mg (6.2mL)	380mg (7.6mL)	450mg (9mL)	600mg (12mL)	800mg (16mL)	1g (20mL or 2 cap)	1.25g (25mL)	1.5g (30mL or 3 cap)	2g (40mL or 4 cap)	
	Otitis media	Oral Twice a day (bd)												

Highlighted text updated June 2024

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† = other strengths and forms available. Doses in brackets (mL, tab) only apply to forms and strengths listed. Doses (mL) rounded up to nearest 0.2ml unless this is more than 10% above recommended dose

Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years and over	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Amoxycillin-clavulanic acid† Susp: 80+11.4mg/mL Tab: 875+125mg Pregnancy: **B1**– avoid if PROM Breastfeed: safe to use	Bite injury Chronic cough CSLD Dental infection UTI	Oral Twice a day (bd)	22.5mg/kg/dose	74.25mg (1mL)	139.5mg (1.9mL)	171mg (2.3mL)	202.5mg (2.7mL)	270mg (3.6mL)	360mg (4.7mL)	450mg (5.8mL)	562.5mg (7.2mL)	720mg (9.0mL)	875mg (11mL or 1 tab)	Doses worked out using amoxicillin component. Take with food. Caution if liver disease.
	Otitis media	Oral Twice a day (bd)	45mg/kg/dose	148.5mg (1.9mL)	279mg (3.5mL)	342mg (4.3mL)	405mg (5.1mL)	540mg (6.8mL)	720mg (9mL)	900mg (11.4mL)	1.13g (14mL)	1.4g (18mL)	1.75g (22mL or 2 tab)	
Ampicillin Inj#: 500mg, 1g Pregnancy: **A** – safe to use Breastfeed: safe to use	Endocarditis prevention Gall bladder	IV Single dose	50mg/kg/dose	165mg (1.7mL)	310mg (3.3mL)	380mg (4mL)	450mg (4.7mL)	600mg (6mL)	800mg (8mL)	1g (10mL)	1.25g (12.7mL)	1.6g (16mL)	2g (20mL)	# **Mix** with WFI to give 100mg/mL – **500mg** with 4.7ml, **1g** with 9.3ml.
Azithromycin† Susp: 40mg/mL Tab: 500mg Pregnancy: **B1**– safe to use Breastfeed: safe to use	Trachoma — TF or TI	Oral Single dose		80mg (2mL)	160mg (4mL)			240mg (6mL)	400mg (10mL)	500mg (12.5mL or 1 tab)		750mg (18.8mL or 1½ tab)	1g (25mL or 2 tab)	
	Severe pneumonia	Oral Single dose	10mg/kg/dose	33mg (0.8mL)	62mg (1.6mL)	76mg (2mL)	90mg (2.5mL)	120mg (3mL)	160mg (4mL)	200mg (5mL)	250mg (6.5mL)	320mg (8mL)	400mg (10mL)	
	Sore throat	Oral Once a day	12mg/kg/dose	N/A	74.4mg (2mL)	91.2mg (2.5mL)	108mg (3mL)	144mg (4mL)	192mg (5mL)	240mg (6mL)	300mg (7.7mL)	384mg (10mL)	480mg (12mL or 1 tab)	
	Otitis media	Oral Single dose	30mg/kg/dose	N/A	186mg (4.8mL)	228mg (5.8mL or ½ tab)	270mg (6.8mL)	360mg (9mL)	480mg (12mL or 1 tab)	600mg (15mL)	750mg (18.8mL or 1½ tab)	1g (25mL or 2 tab)	1g (25mL or 2 tab)	
Benzathine benzylpenicillin (Bicillin L-A) Inj: 1,200,000units/2.3mL 600,000units/1.2mL syringe Pregnancy: **A** – safe to use Breastfeed: safe to use	Chickenpox Skin sores Sore throat	Deep IM Single dose	450,000units/0.9mL (337.5mg)					600,000units/1.2mL (450mg) For child 10-19kg		1,200,000units/2.3mL (1 x 2.3mL syringe) (900mg)				Long lasting low levels of penicillin. **Do not** give for pneumonia. **Note:** 1,200,000units=900mg For syphilis dose see STI protocols.
	RHD	Deep IM Every 21-28days	600,000units/1.2mL (1 x 1.2mL syringe) (450mg) For child less than 10kg paediatrician consult for secondary prophylaxis regimen							1,200,000units/2.3mL (1 x 2.3mL syringe) (900mg)				

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† = other strengths and forms available. Doses in brackets (mL, tab) only apply to forms and strengths listed. Doses (mL) rounded up to nearest 0.2ml unless this is more than 10% above recommended dose

Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years and over	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Benzylpenicillin† Inj#: 600mg, 1.2g Pregnancy: **A** – safe to use Breastfeed: safe to use	Dental infection	IV or IM Every 6hours (qid)	30mg/kg/dose	99mg (0.3mL)	186mg (0.6mL)	228mg (0.8mL)	270mg (1mL)	360mg (1.2mL)	480mg (1.6mL)	600mg (2mL)	750mg (2.5mL)	960mg (3.2mL)	1.2g (4mL)	# **Mix** with WFI to give 300mg/mL – **600mg** with 1.6ml **1.2g** with 3.2ml **Inject** over 5 min. **Infuse** over 30 min.
	Severe pneumonia	IV or IM Single dose	50mg/kg/dose	165mg (0.6mL)	310mg (1mL)	380mg (1.3mL)	450mg (1.5mL)	600mg (2mL)	800mg (2.7mL)	1g (3.5mL)	1.2g (4mL)			
	Moderate pneumonia	IV or IM Every 6hours (qid)	50mg/kg/dose											
	Meningitis	IV Single dose	60mg/kg/dose	198mg (0.7mL)	372mg (1.2mL)	456mg (1.5mL)	540mg (2mL)	720mg (2.4mL)	960mg (3.2mL)	1.2g (4mL)	1.5g (5mL)	1.92g (6.4mL)	2.4g (8mL)	
Cefalexin† Susp: 50mg/1mL Cap: 500mg Pregnancy: **A** – safe to use Breastfeed: safe to use	Water-related skin infection	Oral 4 times a day (qid)	12.5mg/kg/dose	41.3mg (0.8ml)	77.5mg (1.6ml)	95mg (2ml)	112.5mg (2.5ml)	150mg (3ml)	200mg (4ml)	250mg (5ml)	312.5mg (6.5ml)	400mg (8ml)	500mg (10ml)	
	Sore throat Soft tissue injuries	Oral Twice a day (bd)	25mg/kg/dose	82.5mg (1.7ml)	155mg (3.3ml)	190mg (4ml)	225mg (4.5ml)	300mg (6ml)	400mg (8ml)	500mg (10mL) or 1 cap – *500mg*)	625mg (12.5mL)	800mg (16mL)	1g (20mL or 2 cap – *500mg*)	
Cefazolin Inj#: 500mg, 1g, 2g Pregnancy: **B1** – safe to use Breastfeed: safe to use	Bone infection	IV Single dose	50mg/kg/dose	N/A	310mg (3.1mL)	380mg (4mL)	450mg (4.5mL)	600mg (6mL)	800mg (8mL)	1g (10mL)	1.25g (12.5mL)	1.6g (16mL)	2g (20mL)	# **Mix** with WFI to give 100mg/mL — **500mg** + 4.8mL **1g** + 9.5mL **2g** + 19mL **Inject** over 3 minutes. **Infuse** over 30 minutes
	Bite injury	IV Twice a day (bd)												
	Compound fracture Head injury Pelvic fracture Penetrating chest injury Soft tissue injuries Severe cellulitis Stab wounds	IV or intraosseous Every 8 hours												
Ceftazidime Inj#: 1g, 2g† Pregnancy: **B1**– safe to use Breastfeed: safe to use	Melioidosis	IV Single dose	50mg/kg/dose	165mg (1mL)	310mg (1.8mL)	380mg (2.2mL)	450mg (2.6mL)	600mg (3.5mL)	800mg (4.7mL)	1g (5.9mL)	1.25g (7.4mL)	1.6g (9.4mL)	2g (11.8mL)	# **Mix** with WFI to give 170mg/mL — **1g** + 5mL **2g**+ 10mL **Inject** over 3 minutes.

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† = other strengths and forms available. Doses in brackets (mL, tab) only apply to forms and strengths listed. Doses (mL) rounded up to nearest 0.2ml unless this is more than 10% above recommended dose

Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years and over	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Ceftriaxone† Inj#: 500mg, 1g, 2g Pregnancy: **B1**– safe to use Breastfeed: safe to use	Gonococcal conjunctivitis Gall bladder infection	IV or IM Single dose	50mg/ kg/dose	165mg (0.7mL)	310mg (1.2mL)	380mg (1.5mL)	450mg (1.8mL)	600mg (2.4mL)	800mg (3.2mL)	1g (4mL)				# **For IM** mix with **lidocaine 1%** to give 250mg/mL – **500mg** + 2ml **1g** + 3.5ml Not more than 1g in each buttock. **For IV** mix with WFI to give 100mg/mL – **500mg** + 5ml **1g** + 10ml **2g** + 40ml **Inject** (up to 1g) over 3 minutes. In urgent and critically unwell (sepsis), 2g dose can be injected over 5 minutes **Infuse** over at least 30 minutes **Do not** mix with **Hartman's solution**
	Water-related skin infection Pneumonia Diarrhoea	IV or IM Single dose	50mg/ kg/dose	165mg (0.7mL)	310mg (1.2mL)	380mg (1.5mL)	450mg (1.8mL)	600mg (2.4mL)	800mg (3.2mL)	1g (4mL)	1.25g (5mL)	1.6g (6.4mL)	2g (8mL)	
	Melioidosis Orbital cellulitis Bowel obstruction Peritonitis Severe pneumonia Sepsis	IV Single dose	50mg/ kg/dose	165mg (0.7mL)	310mg (1.2mL)	380mg (1.5mL)	450mg (1.8mL)	600mg (2.4mL)	800mg (3.2mL)	1g (4mL)	1.25g (5mL)	1.6g (6.4mL)	2g (8mL)	
	Meningitis	IV or IM Single dose	100mg/ kg/dose	N/A	620mg (2.5mL)	760mg (3mL)	900mg (3.6mL)	1.2g (4.8mL)	1.6g (6.4mL)	2g (8mL)	2.5g (10mL)	3.2g (12.8mL)	4g (16mL)	
Cefuroxime Susp†: 25mg/1mL Tab: 250mg Pregnancy: **B1** – safe to use Breastfeed: safe to use	CSLD	Oral Twice a day	15mg/ kg/dose	N/A	93mg (3.7mL)	114mg (4.6mL)	135mg (5.4mL)	180mg (7.2mL)	250mg (10mL or 1 tab – *250mg*)				500mg (20mL or 2 tabs – *250mg*)	Take with food to maximise absorption.
Ciprofloxacin Tab: 250mg, 500mg, 750mg Pregnancy: **B3** – not recommended Breastfeed: safe to use	Water-related skin infections	Oral Twice a day	12.5mg/ kg/dose	N/A	N/A	N/A	125mg (½ tab – *250mg*)		187.5mg (¾ tab – *250mg*)	250mg (1 tab – *250mg*)	312.5mg (1¼ tab – *250mg*)	375mg (1½ tab – *250mg*)	500mg (1 tab – *500mg*)	If kidney disease — reduce dose. Take 1 hour before or 2 hours after food. Drink plenty of water.

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Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years and over	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Clindamycin Cap: 150mg Pregnancy: **A** – safe to use Breastfeed: safe to use	Dental infection	Oral 3 times a day (tds)	7.5mg/ kg/dose	N/A						150mg (1 cap)		300mg (2 cap)		Take with full glass of water.
	Cellulitis	Oral 3 times a day (tds)	10mg/ kg/dose	N/A					150mg (1 cap)		300mg (2 cap)		450mg (3 cap)	
Clindamycin Inj#: 150mg/mL (2mL, 4 mL) Pregnancy: **A** – safe to use Breastfeed: safe to use	Stab wounds	IV Every 8 hours	10mg/ kg/dose	N/A	62mg (0.4ml)	76mg (0.5ml)	90mg (0.6ml)	120mg (0.8ml)	160mg (1.1ml)	200mg (1.3ml)	250mg (1.8ml)	320mg (2.2ml)	**40kg** 400mg (2.8ml) **45kg+** 450mg (3ml)	# **Mix** measured dose with glucose 5% or normal saline to give concentration not more than 12mg/mL. **Infuse** slowly – not more than 30mg/ minute.
	Compound fracture Head injury Soft tissue injury	IV Every 8 hours	15mg/ kg/dose	N/A	93mg (0.6ml)	114mg (0.8ml)	135mg (0.9ml)	180mg (1.2ml)	240mg (1.6ml)	300mg (2ml)	375mg (2.6ml)	480mg (3.2ml)	600mg (4ml)	
Dicloxacillin Cap: 250mg, 500mg Pregnancy: **B2** – safe to use Breastfeed: safe to use	Boils	Oral 4 times a day (qid) *OR* Twice a day (bd) with probenecid*	12.5mg/ kg/dose	N/A						250mg (1cap – *250mg*)		500mg (1 cap – *500mg*)		* If giving with **probenecid** – give same treatment dose but only give twice a day (ie give half usual daily total dose). Take on an empty stomach.
Doxycycline Tab: 50mg, 100mg Cap: 50mg, 100mg Pregnancy: **D – do not use** Breastfeed: safe for 7–10 days	Dental infection	Oral once a day	2mg/ kg/dose	N/A							50mg (1 tab – *50mg*)	75mg (1½ tab – *50mg*)	100mg (1 tab – *100mg*)	Take with food
	Pneumonia	Oral Twice a day												

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Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years and over	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Flucloxacillin† Susp: 50mg/mL Cap: 500mg† Inj#: 500mg, 1g Pregnancy: **B1** – safe to use Breastfeed: safe to use	Soft tissue injuries Nappy rash	Oral 4 times a day (qid)	12.5mg/kg/dose	N/A	77.5mg (1.6mL)	95mg (2mL)	112.5mg (2.4mL)	150mg (3mL)	200mg (4mL)	250mg (5mL)	312.5mg (6.4mL)	400mg (8mL)	500mg (10mL or 1 cap)	If giving with **probenecid** – give same treatment dose but only give twice a day (ie give half usual daily total dose). Take on an empty stomach.
	Orbital cellulitis Mastoiditis	IV Single dose	50mg/kg/dose	N/A	310mg (6.2mL)	380mg (7.6mL)	450mg (9mL)	600mg (12mL)	800mg (16mL)	1g (20mL)	1.25g (25mL)	1.6g (32mL)	2g (40mL)	# **Mix** with WFI to give 50mg/mL – **500mg** with 9.6ml **1g** with 19.3ml. **Inject** over 3 minutes. If 2g inject over 6 minutes. **Infuse** over 30 minutes. Preferred for 2g.
Gentamicin† Inj: 40mg/mL Pregnancy: **D** – specialist advice Breastfeed: safe to use	Mastoiditis Melioidosis Meningitis	IV Single dose	Children up to 10 years old – 7.5mg/kg/dose up to 320mg Children over 10 years old – 6mg/kg/dose up to 560mg	**Medical consult**	46.5mg (1.2mL)	57mg (1.4mL)	67.5mg (1.6mL)	90mg (2.2mL)	120mg (3mL)	150mg (3.8mL)	187.5mg (4.6mL)	240mg (6mL)		For adult **IV push** over 3–5 minutes — can be diluted with normal saline to 20mL. For children need dilution to 10mg/mL or weaker and **infuse** over 30 minutes. Administer **IM** undiluted. If kidney failure — specialist consult. **No maximum adult dose** — continue to calculate dose by weight If obese — **medical consult** about adjusted dose.
	Pneumonia	IM Single dose												
	Gall bladder Intrauterine infection Mastoiditis Melioidosis Pneumonia Postpartum haemorrhage Uterus infection	IV Single dose	Adult 5mg/kg/dose	N/A									**50kg** 250mg (6.4mL) **60kg** 300mg (7.6mL) **70kg** 350mg (8.8mL)	
	Intrauterine infection Postpartum haemorrhage Uterus infection	IV Once a day												

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Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years and over	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Ivermectin Tab: 3mg Pregnancy: **B3** – avoid use Breastfeed: safe to use	Scabies Strongyloides	Oral Single dose	200microgram/ kg/dose	N/A						1 tab	2 tab		**40kg** 3 tab **60kg** 4 tab **70kg** 5 tab **80kg+** 6 tab	**Do not** give to children under 5 years, or less than 15kg. Give with full cream milk or fatty food.
	Crusted scabies	Oral Once a day on days 0, 1, 7	200microgram/ kg/dose											
Metronidazole† Susp: 40mg/mL Tab: 200mg, 400mg Pregnancy: **B2** – safe to use Breastfeed: safe to use	Bites Dental infection Diabetic ulcer Soft tissue infection Water-related skin infections	Oral Twice a day (bd)	10mg/ kg/dose	**Medical consult**	62mg (1.6mL)	76mg (2mL)	90mg (2.4mL)	120mg (3mL)	160mg (4mL)	200mg (5mL or 1 tab – *200mg*)	250mg (6.4mL)	320mg (8mL or 1¼ tab – *200mg*)	400mg (10mL or 1 tab – *400mg*)	Must not drink alcohol while taking and for 24 hours after. Take with food. If pregnant or breastfeeding – give divided doses. Withhold breastfeeding for 12 hours after single high dose (2g) If severe liver disease – reduce dose. **Do not** infuse faster than 5mL/min. Give 500mg over 20 minutes.
	Giardia	Oral Once a day	30mg/ kg/dose	99mg (2.6mL)	186mg (4.8mL)	228mg (5.8mL)	270mg (6.8mL)	360mg (9mL or 1 tab – *400mg*)	480mg (12mL or 1 tab – *400mg*)	600mg (15mL or 3 tab – *200mg*)	750mg (18.8mL or 2 tab – *400mg*)	960mg (24mL or 5 tab – *200mg*)	**40kg** 1.2g (3 tab – *400mg*) **50kg** 1.6g (4 tab – *400mg*) **60kg+** 2g (5 tab – *400mg*)	
Metronidazole Inj: 5mg/mL Pregnancy: **B2** – safe to use Breastfeed: safe to use	Gall bladder	IV Single dose	12.5mg/ kg/dose	**Medical consult**	77.5mg (15.6mL)	95mg (19mL)	112.5mg (22.6mL)	150mg (30mL)	200mg (40mL)	250mg (50mL)	312.5mg (62.6mL)	400mg (80mL)	500mg (100mL)	
	Bite injury Dental infection Soft tissue infection Stab wounds	IV Twice a day (bd)												

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Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years and over	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Phenoxymethyl-penicillin† Susp: 50mg/mL (250mg/5mL) Cap: 500mg Pregnancy: **A**– safe to use Breastfeed: safe to use	Sore throat	Oral Twice a day (bd)	15mg/kg/dose	49.6mg (1mL)	93mg (1.9mL)	114mg (2.3mL)	135mg (2.7mL)	180mg (3.6mL)	240mg (4.8mL)	300mg (6mL)	375mg (7.5mL)	480mg (9.6mL)	500mg (10mL or 1 cap)	
Praziquantel Tab: 600mg Pregnancy: **B1** – specialist advice Breastfeed: safe to use	Dwarf tapeworms	Oral Single dose	25mg/kg/dose	N/A	N/A	N/A	300mg (½ tab)			450mg (¾ tab)	600mg (1 tab)	750mg (1¼ tab)	900mg (1½ tab) **50kg+** 1.2g (2 tab)	Children don't like the taste. Give with food. **Do not** chew tablet.
Probenecid Tab: 500mg Pregnancy: **B2** – specialist advice Breastfeed: safe to use	Severe cellulitis	Oral Twice a day (bd)	25mg/kg/dose	N/A				250mg (½ tab)		500mg (1 tab)		750mg (1½ tab)	1g (2 tab)	Delays excretion of penicillin. Tablet can be dispersed in water.
Procaine benzylpenicillin (procaine penicillin) Inj: 1.5g (3.4mL syringe) Pregnancy: **A** – safe to use Breastfeed: safe to use	Cellulitis Nappy rash	Deep IM Once a day	50mg/kg/dose	165mg (0.4mL)	310mg (0.7mL)	380mg (0.9mL)	450mg (1.1mL)	600mg (1.4mL)	800mg (1.8mL)	1g (2.4mL)	1.25g (3mL)	1.5g (3.4mL)		Shake well. Put into another syringe to measure small doses accurately. Roll syringe between palms to warm before use. Inject slowly

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Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years and over	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Pyrantel Tab: 125mg, 250mg Choc sq: 100mg Pregnancy: **B2** – safe to use Breastfeed: safe to use	Threadworm	Oral Single dose Repeat dose in 2 weeks	10mg/ kg/dose	N/A			100mg or 1 sq	120mg or 1 tab – *125mg*	160mg or 1½ sq or 1 tab – *125mg*	200mg or 2 sq or 1½ tab – *125mg*	250mg or 2½ sq or 1 tab – *250mg*	320mg or 3 sq or 2½ tab – *125mg*	**40kg** 400mg or 4 sq or 3 tab – *125mg* **60kg** 600mg or 6 sq or 5 tab – *125mg* **80kg** 800mg or 3 tab – *250mg* **100kg+** 1g or 4 tab – *250mg*	Take with food. Tablet can be crushed and mixed with jam
	Hookworm	Oral Once a day for 3 days												
Trimethoprim-sulfamethoxazole† (co-trimoxazole) Susp: 8+40mg/mL Tab: 160+800mg Pregnancy: **C** – avoid use Breastfeed: caution	Bites Otitis media Skin infection UTI Soft tissue infection Nappy rash	Oral Twice a day (bd)	4+20mg/ kg/dose	N/A	24.8mg (3.2mL)	30.4mg (3.8mL)	36mg (4.6mL)	48mg (6mL)	64mg (8mL)	80mg (10mL or ½ tab)	100mg (12.6mL)	128mg (16mL)	160mg (20mL or 1 tab)	Doses worked out using trimethoprim component. Addition of Folic Acid for prolonged or high dose courses.
	Melioidosis		6+30mg/ kg/dose	N/A	37.2mg (4.8mL)	45.6mg (5.8mL)	54mg (6.8mL)	72mg (9mL)	96mg (12mL)	120mg (15mL)	150mg (18.8mL or 1 tab)	192mg (24ml or 1 tab)	**40-60kg** 240mg (30mL or 1½ tab) **60+kg** 320mg (40mL or 2 tab)	
	Water-related skin infections		8+40mg/ kg/dose	N/A	49.6mg (6.2mL)	60.8mg (7.6mL)	72mg (9mL or ½ tab)	96mg (12mL)	128mg (16mL)	160mg (20mL or 1 tab)	200mg (25mL)	256mg (32ml or 1½ tab)	320mg (40mL or 2 tab)	

Highlighted text updated June 2024

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Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years and over	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Valaciclovir Tab: 500mg, 1g Pregnancy: **B3** – appears safe in 3rd trimester but aciclovir preferred Breastfeed: safe to use	Chickenpox Shingles	Oral 3 times a day	20mg/ kg/dose	N/A				250mg (½ tab – *500mg*)	375mg (¾ tab – *500mg*)	500mg (1 tab – *500mg*)		750mg (1½ tab – *500mg*)	1g (1 tab – *1g*)	Tablets can be crushed but taste unpleasant. Mix with jam.
Vancomycin† Inj#: 500mg, 1g Pregnancy: B2 - safe to use Breastfeed: safe to use	Sepsis	IV Single dose	**Paediatric** 15mg/ kg/dose	49.5mg (1mL)	93mg (2mL)	114mg (2.4mL)	135mg (2.8mL)	180mg (3.6mL)	240mg (4.8mL)	300mg (6mL)	375mg (7.6mL)	480mg (9.6mL)	600mg (12mL)	**Medical consult** # **Mix** with WFI to give 50mg/mL – **500mg**+10mL **1g+**20mL Doses 500mg or less can be given over 60 minutes. **Do not infuse doses greater than 500mg at a rate faster than 10mg/minute** as red man syndrome can occur
			Adult 20mg/ kg/dose							**41-50kg** 1g (20mL) infuse over 1 hour 40min **51-60kg** 1.2g (24mL) infuse over 2 hours **61-70kg** 1.4g (28mL) infuse over 2 hours 20min **71-80kg** 1.6g (32mL) infuse over 2 hours 40min **81-90kg** 1.8g (36mL) infuse over 3 hours **91-100kg** 2g (40mL) infuse over 3 hours 20min **101-110kg** 2.2g (44mL) infuse over 3 hours 40min **Over 110kg** 2.4g (48mL) infuse over 4 hours				

Pregnancy categories: 'Harm' means to foetus. For more detail see *Australian Medicines Handbook* or *Therapeutic Guidelines*
Category A: Have been taken by large numbers of pregnant and fertile women without any known harm
Category B1: Have been used in a limited number of pregnant and fertile women without any known harm. Animal studies have not shown harm
Category B2: Women as for B1. Animal studies are less adequate, but no evidence of harm
Category B3: Women as for B1. Animal studies shown some evidence of harm, but not clear if this is significant for humans
Category C: Have caused or are suspected of causing non–permanent harm
Category D: Have caused or are suspected of causing permanent harm. Category C and D medicines are not always contraindicated for use in fertile women. The risks and benefits need to be discussed
Category X: Drugs which have such a high risk of causing permanent damage to the foetus that they should not be used in pregnancy or when there is a possibility of pregnancy

For more information and details on giving antibiotics see *AMH*, *Therapeutic Guidelines*, *Medicines Book*, *Australian Injectable Drugs Handbook*

Other medicines doses table

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Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose											Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years	14+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg	50kg+	
Benzatropine† Inj: 1mg/mL (2mL) Pregnancy: B2 – safe to use Breastfeed: Appears safe	Oculogyric crisis	IM or IV Single dose	20microgram/ kg/dose	N/A	N/A	N/A	N/A	N/A	0.3mg (0.3mL)	0.4mg (0.4mL)	0.5mg (0.5mL)	0.6mg (0.6mL)	0.8mg (0.8mL)	1mg (1mL)	
Dexamethasone† Inj: 4mg/mL (1ml, 2ml) Pregnancy: A – safe, but use lowest dose for shortest time Breastfeed: Use alternative if available	Meningitis	IV or IM if no IV access Single dose	0.15mg/kg/ dose	0.5mg (0.1mL)	0.93mg (0.2mL)	1.14mg (0.3mL)	1.35mg (0.35mL)	1.8mg (0.5mL)	2.4mg (0.6mL)	3.0mg (0.8mL)	3.75mg (1mL)	4.8mg (1.2mL)	6.0mg (1.5mL)	**50kg** 7.5mg (1.9mL) **60kg** 9mg (2.3mL) **70kg+** 10mg (2.5mL)	Give IV over 1–3 min Give IM if no IV access
Hydrocortisone Inj: 50mg/mL Pregnancy: **A** – safe, but use lowest dose for shortest time Breastfeed: Safe to use, avoid high doses	Meningitis	IV Single dose	4mg/ kg/dose	13.2mg (0.3mL)	24.8mg (0.5mL)	30.4mg (0.6mL)	36mg (0.7mL)	48mg (1mL)	64mg (1.3mL)	80mg (1.6mL)	100mg (2mL)	128mg (2.6mL)	160mg (3.2mL)	200mg (4mL)	Give IV over 1 min Give IM if no IV access
	Severe asthma	IM or IV Single dose		13.2mg (0.3mL)	24.8mg (0.5mL)	30.4mg (0.6mL)	36mg (0.7mL)	48mg (1mL)	64mg (1.3mL)	80mg (1.6mL)	100mg (2mL)				
Ibuprofen† Susp: 20mg/mL Tab: 200mg, 400mg Pregnancy: **C**– avoid Breastfeed: Safe to use	Dental pain Redback spider	Oral 3 times a day (tds)	10mg/ kg/ dose	N/A	62mg (3.1mL)	76mg (3.8mL)	90mg (4.5mL)	120mg (6mL)	160mg (8mL)	200mg (10mL)	250mg (12.5mL)	320mg (16mL)	400mg (20mL or 1 tab)		

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Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose											Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years	14+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg	50kg+	
Levetiracetam Inj#: 100mg/mL (5mL) Pregnancy: B3 – get advice Breastfeed: caution	Head injury	IV Loading dose	20mg/ kg/dose	66mg (0.7mL)	124mg (1.2mL)	152mg (1.5mL)	180mg (1.8mL)	240mg (2.4mL)	320mg (3.2mL)	400mg (4mL)	500mg (5mL)	640mg (6.4mL)	800mg (8mL)	1g (10mL)	# **Mix** measured dose with 100mL normal saline or glucose 5% Give by IV infusion over 15 minutes (head injury), 5 minutes (fits)
	Fits	IV or intraosseous Loading dose	40mg/ kg/dose	132mg (1.3mL)	248mg (2.5mL)	304mg (3mL)	360mg (3.6mL)	480mg (4.8mL)	640mg (6.4mL)	800mg (8mL)	1g (10mL)	1.28g (12.8mL)	1.6g (16mL)	2g (20mL)	
Naloxone Inj#: 0.4mg/mL (1ml, 5ml) Pregnancy: **B1– medical consult** in opioid-dependent women Breastfeed: May be used	Over-sedation (opioids)	IV	0.01mg/ kg/dose	0.03mg (0.3mL)	0.06mg (0.6mL)	0.08mg (0.8mL)	0.09mg (0.9mL)	0.12mg (1.2mL)	0.16mg (1.6mL)	0.2mg (2mL)					# **Mix** with normal saline to give 0.1mg/mL — **1mL** + 3mL **5mL** + 15mL
Ondansetron† Wafer: 4mg, 8mg Pregnancy: **B1**– safe to use after first trimester if all other options are not suitable Breastfeed: Caution	Head injuries Nausea and vomiting	Oral wafer		N/A		2mg			4mg (1 wafer – *4mg*)				8mg (1 wafer – *8mg*)		Best anti-emetic when sedation not wanted. Always do **medical consult** for children

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Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose											Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years	14+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg	50kg+	
Paracetamol† Susp: 48mg/mL (240mg/5mL) Tab: 500mg Supp: 125mg, 250mg, 500mg Pregnancy: **A** – safe to use Breastfeed: safe to use	Fever with pain Pain	Oral 4 times a day (qid)	15mg/ kg/dose	49.5mg (1.1mL)	93mg (2mL)	114mg (2.4mL)	135mg (2.8mL)	180mg (3.8mL)	240mg (5mL or ½ tab)	300mg (6.4mL or ½ tab)	375mg (7.8mL or 1 tab)	480mg (10mL or 1 tab)	600mg (12.5mL or 1 tab)	1g (2 tab)	If child dose for weight is more than dose for age — use dose for age
		Supp 4 times a day (qid)		N/A		125mg			250mg		500mg			1g	
Prednisolone Susp: 5mg/mL Pregnancy: **A**– safe, but use lowest dose for shortest time Breastfeed: Safe to use	Asthma	Oral	1mg/ kg/dose	3.3mg (0.7mL)	6.2mg (1.2mL)	7.6mg (1.5mL)	9mg (1.8mL)	12mg (2.4mL)	16mg (3.2mL)	20mg (4mL)	25mg (5mL)	32mg (6.4mL)	40mg (8mL)	50mg (10mL)	Take after breastfeed and wait 4 hours before next feed
Promethazine† Susp: 1mg/mL Tab: 25mg Inj: 25mg/mL (2ml) Pregnancy: **C** – safe to use Breastfeed: Appears safe	Fly bite	Oral Once a day	0.5mg/ kg/dose	N/A				6mg (6mL)	8mg (8mL)	10mg (10mL)	12.5mg (12.5mL)	16mg (16mL)	20mg (20mL)	25mg (1 tab)	Best anti-emetic if sedation needed Always do **medical consult** for children
	Nausea + vomiting Sedation	Oral													
	Nausea + vomiting Sedation	Deep IM	0.25mg/ kg/dose	N/A				3mg (0.12mL)	4mg (0.16mL)	5mg (0.2mL)	6.25mg (0.25mL)	8mg (0.3mL)	10mg (0.4mL)	12.5mg (0.5mL)	

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Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose											Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years	14+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg	50kg+	
Tranexamic acid Inj#: 100mg/mL (5ml, 10ml) Pregnancy: B1 – safe after first trimester Breastfeed: Appears safe	Control bleeding	IV infusion Loading dose	15mg/kg/ dose	N/A					240mg (2.4mL)	300mg (3mL)	375mg (3.75mL)	480mg (4.8mL)	600mg (6mL)	1g (10mL)	**Loading dose:** For **adults**: Dilute 1g in 100mL normal saline or 5% dextrose and infuse over 10 minutes For **children**: Inject undiluted over 10 minutes. Dilute with normal saline if necessary.
		Maintenance dose infusion per hour	2mg/kg/hour	N/A					32mg (32mL)	40mg (40mL)	50mg (50mL)	64mg (64mL)	80mg (80mL)	100mg (100mL)	**Maintenance dose:** For **adults**: Dilute 1g in 1,000mL of normal saline or 5% glucose and infuse over 8 hours For **children**: Dilute 500mg in 500mL normal saline or 5% glucose to give 1mg/mL and infuse at 2mL/ kg/h over 8 hours (maximum dose 125mg per hour).

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Medicine and presentation	Common uses	Route and frequency	Dosage	Amount per dose											Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12 years	14+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg	50kg+	
Tranexamic acid Inj*: 100mg/mL (5ml, 10ml) Pregnancy: B1 – safe after first trimester Breastfeed: Appears safe	Control bleeding in postpartum haemorrhage	IV		N/A										1g (10mL)	Inject undiluted over 10 minutes. Dilute with normal saline if necessary.
Valproate† Inj#: 400mg Pregnancy **D -** avoid if possible Breastfeed: Appears safe	Fits	IV or intraosseous Single dose	20mg/kg/dose	N/A				240mg (4.8mL)	320mg (6.4mL)	400mg (8mL)	500mg (10mL)	640mg (12.8mL)	800mg (16mL)	800mg (16mL)	**#Inject:** mix with normal saline to give 50mg/mL or less — **400mg** + 8mL. **Inject** over 15 minutes.
		Infusion dose per hour	1.6mg/kg/hr	N/A				19.2mg (4.8mL)	25.6mg (6.4mL)	32mg (8mL)	40mg (10mL)	51.2mg (12.8mL)	64mg (16mL)	**50kg** 80mg (20mL) **60kg** 96mg (24mL) **65kg+** 104mg (26mL)	#**Infuse:** mix with 100mL normal saline + 5% glucose to give 4mg/mL.

Pregnancy categories: 'Harm' means to foetus. For more detail see *AMH* or *Therapeutic Guidelines*
Category A: Have been taken by large numbers of pregnant and fertile women without any known harm
Category B1: Have been used in a limited number of pregnant and fertile women without any known harm. Animal studies have not shown harm
Category B2: Women as for B1. Animal studies are less adequate, but no evidence of harm
Category B3: Women as for B1. Animal studies shown some evidence of harm, but not clear if this is significant for humans
Category C: Have caused or are suspected of causing non–permanent harm
Category D: Have caused or are suspected of causing permanent harm. Category C and D medicines are not always contraindicated for use in fertile women. The risks and benefits need to be discussed
Category X: Drugs which have such a high risk of causing permanent damage to the foetus that they should not be used in pregnancy or when there is a possibility of pregnancy

Note: † = Other strengths available
For more information and details on giving medicines see *AMH*, *Therapeutic Guidelines*, *Medicines Book*, *Australian Injectable Drugs Handbook*

Medicines for women's health emergencies

Medicine	Form	Manner of administration
Betamethasone	5.7mg/mL solution in 1mL ampoule	IM injection
Calcium gluconate 10%	0.22mmol/mL solution in 10mL ampoule	IV injection IV infusion
Dexamethasone	4mg/mL solution in 1mL and 2mL ampoules	IM injection
Ergometrine	500microgram/mL solution in 1mL ampoule	IM injection IV injection
Hepatitis B immunoglobulin*	Solution in 100 international unit and 400 international unit ampoules	Deep IM injection
Hydralazine	25mg and 50mg tablets 20mg powder for reconstitution	Oral IV drip IV infusion
Magnesium sulfate	500mg/mL concentrate in 5mL and 10mL ampoules	IV drip IV infusion IM injection
Misoprostol	200microgram tablet 200microgram pessary	Oral Buccal Sublingual Vaginal
Nifedipine	10mg, 20mg tablets — immediate release	Oral
Nitrous oxide + oxygen	Premixed gas — 50% nitrous oxide + 50% oxygen	Inhalation
Oxytocin	5 international unit/mL and 10 international unit/mL solutions in 1mL ampoules	IM injection IV injection IV infusion
RhD immunoglobulin*	Solution in 250 international unit and 625 international unit ampoules	IM injection
Vitamin K	10mg/mL solution in 0.2mL and 1mL ampoules	Oral IM injection IV injection

*make sure immunoglobulin in stock

Abbreviations

°	degree
%	percent
ABC	airway, breathing, circulation
ACE	angiotensin-converting enzyme
ACR	albumin creatinine ratio
ACW	Aboriginal community worker
AF	arterial fibrillation
AFP	alpha-fetoprotein
AIDS	acquired immunodeficiency syndrome
AIS	adenocarcinoma-in-situ
anti-D	Rh D immunoglobulin
Anti-HBc	hepatitis B core antibody
Anti-HBe	hepatitis B envelope antibody
Anti-HBs	hepatitis B surface antibody
Anti-HCV	hepatitis C antibody
APTT	activated partial thromboplastin time
ARB	angiotensin II receptor blockers
ARF	acute rheumatic fever
ART	assisted reproductive technology
ASQ TRAK	developmental screening tool for Aboriginal children
ATSIHP	Aboriginal and Torres Strait Islander health practitioner
AVO	apprehended violence order
BCG	Bacille Calmette Guérin (vaccine for tuberculosis)
bd	bis die – twice a day
beta hCG	beta-Human chorionic gonadotropin
BGL	blood glucose level
BMD	bone mineral density
BMI	body mass index
BP	blood pressure
BV	bacterial vaginosis
C	centigrade
cap	capsule
CARPA	Central Australian Rural Practitioners Association
CARPA STM	CARPA Standard Treatment Manual
CD4	cluster of differentiation 4
CDC	Centre for Disease Control
CDNA	Communicable Disease Network Australia
CHC	combined hormonal contraception
CIN	cervical intraepithelial neoplasm
CIN 2/3	cervical intraepithelial neoplasm grade 2 or 3
CKD	chronic kidney disease
cm	centimetres
COC	combined oral contraceptive pill
COPD	chronic obstructive pulmonary disease
CPM	Clinical Procedures Manual

CPR	cardiopulmonary resuscitation
CR	controlled release
CRP	c-reactive protein
CT	computed tomography (scan)
CTG	cardiotocogram
CVC	central venous catheter
CVD	cardiovascular disease
CVS	chorionic villus sampling
D&C	dilation and curettage
DHEAS	dehydroepiandrosterone sulphate
DiDi	dichorionic diamniotic
DM	diabetes mellitus
DNA	deoxyribonucleic acid
DOB	date of birth
DRSABCD	resuscitation acronym
DVT	deep vein thrombosis
E2	oestradiol
ECG	electrocardiogram
ECHO	echocardiogram
ECP	emergency contraceptive pill
ECS	endocervical
EDB	estimated date of birth
EDTA	ethylenediaminetetraacetic acid
eg	exempli gratia – for example
eGFR	estimated glomerular filtration rate
EMTOP	early medical termination of pregnancy
ENG	etonogestrel
ENG implant	etonogestrel implant
EPDS	Edinburgh Postnatal Depression Scale
EPG	eggs per gram
etc	et cetera – and so forth
F	French gauge
FAI	free androgen index
FAM	fertility awareness methods
FBC	full blood count
fL	femtoliters
FNA	fine needle aspiration
FRA-BOC	familial risk assessment - breast and ovarian cancer
FSH	follicle stimulating hormone
G	gauge
g	gram
GBS	Group B streptococcus
GDM	gestational diabetes mellitus
GP	general practitioner
H2	histamine 2
HAV IgG	hepatitis A immunoglobulin G antibodies
Hb	haemoglobin
HbA1c	glycated haemoglobin

HBeAG	hepatitis B envelope antigen
HBsAg	hepatitis B surface antigen
HBV	hepatitis B virus
HBV DNA	hepatitis B virus DNA in serum (viral load)
hCG	human chorionic gonadotrophin
HCV	hepatitis C virus
HIV	human immunodeficiency virus
HPV	human papillomavirus
hr	hour
HSIL	high-grade squamous intraepithelial lesion
HSV	herpes simplex virus
HTLV-1	human T-lymphotrophic virus type 1
HVS	high vaginal swab
hypo	hypoglycaemic episode
ICU	intensive care unit
IDA	iron deficiency anaemia
IGT	impaired glucose tolerance
IM	intramuscular (in the muscle)
inj	injection
INR	international normalised ratio
IO	intraosseous (in the bone)
IR	immediate release
IUD	intrauterine device
IUGR	intrauterine growth restriction
IV	intravenous (in the vein)
IVF	in-vitro fertilisation
kg	kilogram
L	litre
LA	local anaesthetic
LARC	long-acting reversible contraceptive
LBC	liquid based cytology
LEEP	loop electrosurgical excision procedure
LFT	liver function test
LH	luteinising hormone
LLETZ	large loop excision of the transformation zone
LMP	last menstrual period
LNG	levonorgestrel
LNG-IUD	evonorgestrel (hormonal) intrauterine device
LNMP	last normal menstrual period
LSIL	low-grade squamous intraepithelial lesion
LVS	low vaginal swab
MC&S	microscopy, culture, and sensitivity
MCV	mean cell volume
MeHR	My eHealth Record
mg	milligram
microL	microlitre
min	minute
mL	millilitre

mm	millimetre
mmHg	millimetre of mercury
mmol	millimole
MMR	measles, mumps, rubella (vaccination)
MoDi	monochorionic diamniotic
mol	mole
MoMo	monochorionic monoamniotic
MRT	menopausal replacement therapy
MSU	mid-stream urine
N/A	not applicable
NAAT	nucleic acid amplification test
NE	norethisterone
NGT	nasogastric tube
NPY	Ngaanyatjarra, Pitjantjatjara and Yankunytjatjara
NRT	nicotine replacement therapy
NSAID	non-steroidal anti-inflammatory drug
NT	Northern Territory
NTD	neural tube defect
O_2	oxygen
O_2 sats	oxygen saturation
OGTT	oral glucose tolerance test
OROS	osmotic-controlled release oral delivery system
p	page
PBS	Pharmaceutical Benefits Scheme
PCEHR	personally controlled electronic health record
PCOS	polycystic ovary syndrome
PCOSQ	PCOS quality of life tool
PDM	pre-existing diabetes mellitus
PE	pulmonary embolus
pHSIL	possible high-grade squamous intraepithelial lesion
PHU	Public Health Unit
PID	pelvic inflammatory disease
pLSIL	possible low-grade squamous intraepithelial lesion
PMS	pre-menstrual syndrome
POC	point of care
POP	progesterone-only pill
PPE	personal protective equipment
PPROM	preterm premature rupture of membranes
PR	per rectum
PrEP	pre-exposure prophylaxis (for HIV)
PROM	premature rupture of membranes
PSGN	post-streptococcal glomerulonephritis
qid	quarter in die – 4 times a day
QLD	Queensland
REWS	remote early warning score
RFDS	Royal Flying Doctor Service
Rh	Rhesus
RhD	Rhesus D antigen

RHD	rheumatic heart disease
RhD-Ig	Rhesus D immunoglobulin
RNA	ribonucleic acid
RPR	rapid plasma reagin
RR	respiratory rate
SANDS	stillbirth and neonatal death support
SARC	Sexual Assault Referral Centre
SHBG	sex hormone binding globulin
SIDS	sudden infant death syndrome
SLE	systemic lupus erythematosus
SNRI	serotonin and noradrenaline reuptake inhibitors
SR	sustained release
SSRI	selective serotonin reuptake inhibitors
STI	sexually transmitted infection
subcut	subcutaneous (under the skin)
susp	suspension
SWSBSC	Strong Women, Strong Babies, Strong Culture
T	temperature
T3	triiodothyronine (thyroid hormone)
T4	thyroxine (thyroid hormone)
tab	tablet
tds	ter die sumendum – 3 times a day
temp	temperature
TFT	thyroid function test
TIA	transient ischemic attack
TOP	termination of pregnancy
TTTS	twin-to-twin transfusion syndrome
TZ	transformation zone
U/A	urinalysis (with dipstick)
UEC	urea, electrolytes, creatinine
UPA-ECP	ulipristal acetate emergency contraceptive pill
UTI	urinary tract infection
VIN	vulval intraepithelial neoplasia
VTE	venous thromboembolism
WA	Western Australia
WBM	Women's Business Manual
WFI	water for injection

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