

Minymaku Kutju Tjukurpa Women's Business Manual

Standard Treatment Manual for Women's Business
in remote and Indigenous health services
in central and northern Australia

Minymaku Kutju Tjukurpa: 'Women Only Story'

6th edition

CARPA
Central Australian Rural Practitioners Association Inc



RPHCM
Remote Primary Health Care Manuals



CRANAplus
improving remote health

Centre for Remote Health
Alice Springs, 2017

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Preface

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 is produced by Congress Alukura under its umbrella organisation, Central Australian Aboriginal Congress. Congress Alukura is a health service for the Aboriginal women of Central Australia, servicing areas within a 100km radius of Alice Springs. 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.

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 has seven branches that service a wide range of primary health care programs.

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 Indigenous 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 sixth 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, CRANApus and the Centre for Remote Health. The other manuals in the suite are the *CARPA Standard Treatment Manual (CARPA 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 *CARPA STM* and the *CPM* are 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 either

- Online feedback form at www.remotephcmmanuals.com.au
- Email to remotephcmmanuals@flinders.edu.au

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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 can be found at www.remotephcmanuals.com.au

This acknowledges those contributors known to us. Due to the large number of volunteers, we have only recorded the highest level of participation.

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We wish to recognise Sabina Knight, founding chair, for 30 years of leadership, inspiration and commitment to improving health care in remote and Indigenous Australia.

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Content

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Using the Women's Business Manual

The *Women's Business Manual* assumes competent general nursing rather than expert midwifery skills. Depending on experience and English literacy skills, Aboriginal and Torres Strait Islander Health Practitioners (ATSIHPs) may also be able to use the manual to look after women. The manual is also useful as a teaching and learning resource.

Remote practitioners have varying knowledge and skills in women's health and must be allowed to work to their own ability. All staff should be encouraged to update their skills in all areas of women's health.

Use of the *WBM* is not intended to replace clinical judgement, expertise or appropriate referral. It does not support practitioners to work beyond their level of competence or confidence, or outside their scope of practice or health service policies. The supply of medicines recommended in the manual must occur within the constraints of organisational policies 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 *WBM* 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 their 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 are not acceptable to the person or their carer.

Practitioners should discuss with the person the impact of a diagnosis on their ability to hold an unconditional driver's license. Reporting requirements vary by jurisdiction. For more information see www.austroads.com.au/drivers-vehicles/assessing-fitness-to-drive

Terms

Indigenous

In this manual the term Indigenous is used to mean both Aboriginal and Torres Strait Islander Australians. We mean no disrespect by using this inclusive term for different cultural groups and apologise for any discomfort or sorrow it may cause.

Abbreviations

Abbreviations and acronyms may be used without explanation. There is an abbreviation list, including acronyms, in the reference section.

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. It may be in person or by telehealth (eg phone, radio or videoconference).

Medical review

A medical review is an assessment of the patient by a doctor, appropriately qualified nurse practitioner, midwife or specialist. This can be done in person or via case conference. It usually involves 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.

Information boxes

Black boxes — easy to find information.

Thin red boxes — important information.

Thick red boxes — very important or life-saving information.

Online version

The *Minymaku Kutju Tjukurpa Women's Business Manual* is available online as part of the Remote Primary Health Care Manuals at:
www.remotephcmanuals.com.au

Cultural safety 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 ([CPM p6](#)). Learn all you can about the local culture. Always be respectful, and carefully consider the following.

Cultural beliefs

- Traditional beliefs about health and illness remain intact, embedded and valid in many Indigenous communities
- Use of traditional healers and traditional medicine is common. It is very important to acknowledge and respect this

Loss and grief

- Indigenous 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

Effective communication

- English can be a second or third language for Indigenous Australians
 - Ask if person would like an interpreter to assist
- Don't assume that conversations conducted in English have the same meaning for practitioner and 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

How you question patients

- 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

1 Introduction

Looking after women's health 6

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 ATSIHP, ACW, or Strong Women, Strong Babies, Strong Culture (SWSBSC) worker, 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, 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)

Traditional Aboriginal cultural practices often differ from the values and attitudes of the clinician they are working with. Be careful not to impose your own views. Aboriginal women's cultural attitudes to pregnancy, birth, contraception, and other aspects of women's health vary and continue to evolve. 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.

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. 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, light, sink with hot and cold water, and private access to a toilet and shower. It is a good idea to have a screen around the couch for more 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 ([p82](#)), Labour and birth ([p154](#)), Postnatal care ([p194](#)), Gynaecology ([p268](#)), Infertility ([p309](#)).

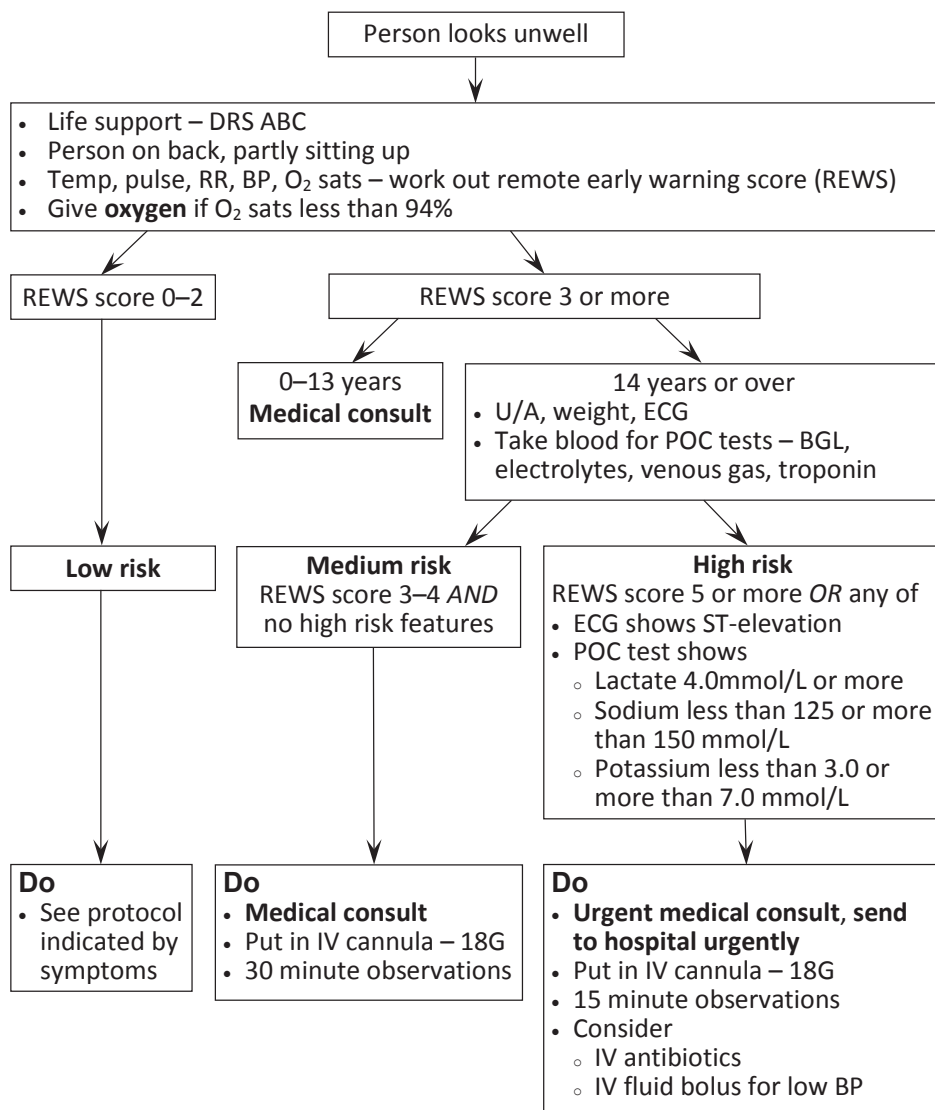
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Early recognition of sick or deteriorating patients

- If concerned a person is not improving or is deteriorating despite treatment —
 - Calculate remote early warning score (REWS) using appropriate table
 - Adult – Table 2.1 *OR* if woman more than 20 weeks pregnant – Table 2.2
 - Child (by age) – Tables 2.3 – 2.6 (*p10*)
 - Score each line individually, then add scores for REWS
 - *THEN* follow Flowchart 2.1

Flowchart 2.1: Management based on risk level



- Person at increased risk of deterioration if
 - Abnormal physical signs
 - Comorbidities (eg RHD, diabetes, kidney disease)
- Better to assume a person is sick and increase care early
 - Do simple investigations early (eg ECG, POC blood tests)
 - **Do not** assume no chest pain means no heart problems
- Consider sepsis in any person with abnormal signs — take blood and urine for culture before giving antibiotics

Sepsis — signs and symptoms can include

- Fast breathing
- Fast pulse
- Low BP or dizziness
- Confusion and/or agitation
- High or low temperature

- After treatment given, re-assess for response
 - If no response or brief/weak response — **medical consult**

Table 2.1: Adult REWS

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	35.1–36	36.1–37.9	38–38.5	38.6–39.5	39.6 or more

Table 2.2: Obstetric REWS

Obstetric — remote early warning score (REWS)							
REWS score	3	2	1	0	1	2	3
Consciousness AVPU				Alert	Voice		Pain Unresponsive
RR	9 or less			10–17	18–24	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	35.1–36	36.1–37.9	38–38.5	38.6–39.5	39.6 or more

Table 2.3: Paediatric REWS — 0–3 months

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
O ₂ sats (%)	90 or less		91–94	95 or more			
O 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	35.1–35.5	35.6–38	38.1–38.5	38.6–39	39.1 or more

Table 2.4: Paediatric REWS — 4–11 months

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
O ₂ sats (%)	90 or less		91–94	95 or more			
O 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	35.1–35.5	35.6–38	38.1–38.5	38.6–39	39.1 or more

Table 2.5: Paediatric REWS — 1–4 years

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
O ₂ sats (%)	90 or less		91–94	95 or more			
O 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	35.1–35.5	35.6–38	38.1–38.5	38.6–39	39.1 or more

Table 2.6: Paediatric REWS — 5–12 years

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
O ₂ sats (%)	90 or less		91–94	95 or more			
O 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	35.1–35.5	35.6–38	38.1–38.5	38.6–39	39.1 or more

* If using mask — 4L/min

- To calculate level of respiratory distress for child see Table 2.7
 - Assess each category individually
 - Use the highest grade in any category when calculating REWS

Table 2.7: 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 irritable 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 blue (cyanosis) • Increasingly frequent or prolonged apnoeas

Heavy vaginal bleeding

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

Remember — Life support — DRS ABC (*CARPA STM p10*)

Signs of shock

- Restless, confused, drowsy, unconscious
- Pale, cool, moist skin
- Fast breathing
- Pulse fast (more than 100 beats/min) or difficult to feel
- Low BP (systolic less than 100mmHg)
- Capillary refill longer than 2 seconds

Do — in emergency

- Call for help
- Have helper do **medical consult**
- Lie woman on left side
- Give **oxygen** to target O₂ sats 94–98% *OR* if moderate/severe COPD 88–92%
 - Non-rebreather mask 10–15L/min
- Put in IV cannula (*CPM p84*), largest possible
 - Give **normal saline** 1L **straight away**
 - If you can't get IV cannula in — put in IO needle (*CPM p88*)
- **Medical consult** about sending to hospital
 - Ask about pain relief, more IV fluids
- **Do not** let woman eat or drink anything — may need operation

Check

- Put in second IV cannula (*CPM p84*), largest possible
 - Take blood (20mL), flush with 5mL **normal saline**
 - Prepare blood for FBC, blood group. Send in with woman
- If not sure whether woman pregnant — do urine pregnancy test (*p279*)
- When time, put in indwelling urinary catheter (*p281*), connect to urine drainage bag with hourly measure
- 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)
- Temp, pulse, RR, BP, O₂ sats — work out REWS (*p8*). Repeat every 15 minutes

Do — when stabilised *OR* not an emergency

- Diagnose and manage cause of bleeding — Table 2.8

Table 2.8: Causes of heavy vaginal bleeding

Possible cause of bleeding	See
Pregnant — less than 20 weeks (uterus below umbilicus) <i>OR</i> Could be pregnant (missed period) — do urine pregnancy test	<i>Bleeding in pregnancy (p14)</i>
Pregnant — more than 20 weeks (uterus above umbilicus)	
Postpartum — had baby in last 24 hours	<i>Primary postpartum haemorrhage (p58)</i>
Postpartum — had baby between 24 hours and 6 weeks ago	<i>Secondary postpartum haemorrhage (p212)</i>
Not pregnant (negative urine pregnancy test), not postpartum	<i>Abnormal vaginal bleeding in non-pregnant women (p301)</i>

Bleeding in pregnancy

Vaginal bleeding in pregnancy is not normal — **medical consult** straight away.

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

Signs of shock

- Restless, confused, drowsy, unconscious
- Pale, cool, moist skin
- Fast breathing
- Pulse fast (more than 100 beats/min) or difficult to feel
- Low BP (systolic less than 100mmHg)
- Capillary refill longer than 2 seconds

Remember: Pregnant woman can lose 1200–1500mL of blood before any changes in pulse or BP.

Check first

- Temp, pulse, RR, BP, O₂ sats — work out REWS (*p8*)
- Blood loss
 - Check vulva and woman's clothing
 - How much
 - What colour is blood — bright, dark
 - Clots — how big
 - Any smell
 - Measure and record loss
 - Put pad between woman's legs. Change pad at each check. Save and weigh all pads (1g increase = 1mL loss)

Problems

- Even 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
- Doing digital vaginal exam may make bleeding worse
- Bleeding and contractions can lead to high-risk birth
- Severe pain that does not ease between contractions is serious

Do — if emergency

Remember — Life support — DRS ABC (*CARPA STM p10*).

- Call for help — have helper do **medical consult** straight away
- Lie woman on left side
- Give **oxygen** to target O₂ sats 94–98% *OR* if moderate/severe COPD 88–92%
 - Non-rebreather mask 10–15L/min

- Put in 2 IV cannula (*CPM p84*), largest possible
 - If you can't get IV cannula in — put in IO needle (*CPM p88*)
 - Give **normal saline** — 1L straight away *THEN* 125mL/hr or as directed by doctor
- **Medical consult** about sending to hospital
 - Ask about pain relief, IV fluids
- Put in indwelling urinary catheter when time (*p281*), do hourly measures

If birth about to happen — see *Birth baby (p161)*, call for help.

- Get ready for baby who may need resuscitation (*p70*)

Check 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 (*p147*)

Ask

- Bleeding
 - When it started, what she was doing, 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

- Check pad for blood loss, change pad
- Take blood for Kleihauer test. If no antenatal care — also ask for syphilis serology, rubella serology and hepatitis B serology. Send in with woman
- POC test for Hb
- Urine — U/A, send for MC&S
- Abdomen (*CARPA STM p19*) — feel for tenderness, rebound, guarding
- Uterus — feel for
 - Fundal height (*p98*)
 - If fundus above umbilicus — check baby's heart rate



- Tender, painful, hard or soft
 - If uterus hard — **do not** palpate further, **do not** feel for baby's position
 - If uterus soft — feel for position of baby (*p99*)
- Contractions

Do not

- **Do not** do digital vaginal exam before **medical consult**
- **Do not** let woman eat or drink anything — may need operation

Do

- **Medical consult** about
 - Your findings
 - Sending to hospital
 - Pain relief
 - Antibiotics
 - Preterm labour, GBS status positive or unknown, fever
 - If miscarriage — woman with RHD may need preventive antibiotics (*CARPA STM p298*)
 - If woman RhD negative and no Anti-D antibodies — giving RhD-Ig IM
 - 12 weeks or less pregnant and 1 baby — 250 international units
 - 12 weeks or less pregnant and more than 1 baby — 625 international units
 - More than 12 weeks pregnant — 625 international units
- Continue management as directed by doctor/obstetrician

Causes of bleeding

Causes — in first 20 weeks of pregnancy

Ectopic pregnancy

- Pregnancy that occurs outside uterus, usually in fallopian tube
- Risk factors
 - History of PID
 - Tubal surgery (eg for previous ectopic pregnancy)
 - IUD
 - ART (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 be shoulder tip pain
- Diagnosis difficult without ultrasound

Ectopic pregnancy can be life threatening. Tube can rupture and cause massive bleeding inside abdomen.

Miscarriage

- Threatened or actual loss (complete or incomplete) of pregnancy
- Risk factors
 - Major abnormality — about 50%
 - Environmental factors
 - Internal (eg uterine malformation)
 - External (eg substance use)
 - Older mother
- Signs and symptoms
 - Vaginal bleeding — spotting to massive bleeding
 - Abdominal cramping or backache

Other causes

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

Causes — after 20 weeks pregnant (antepartum haemorrhage)

Placenta praevia

All or part of placenta covers opening to cervix (internal os) — F 2.1. Often found on routine ultrasound.

- 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 not possible or too dangerous
- Baby almost always needs to be born by Caesarean section, may need to be born early
- Mother may need blood transfusions



2.1

Placental abruption

Part or all of placenta comes away from wall of uterus — F 2.2.

- 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



2.2

- Uterus may be hard and tender
- Bleeding may be hidden inside uterus — F 2.3
 - 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

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 (fetal blood). Very small bleed can lead to fetal compromise and/or death



2.3

Fits in the second half of pregnancy

For fits in the first half of pregnancy, see *Fits — seizures* (CARPA STM p57).

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

- Eclampsia — fit occurring in a woman with pre-eclampsia (p21) or pregnancy-associated high BP (p127)
 - Can occur up to 3 weeks postpartum
- Epilepsy, alcohol withdrawal, petrol sniffing, head injury, meningitis, encephalitis, stroke, low blood glucose, electrolyte abnormalities

Remember — Life support — DRS ABC (CARPA STM p10).

Do first

- Call for help
 - Have helper do **medical consult** straight away
- Give **oxygen** to target O₂ sats 94–98% *OR* if moderate/severe COPD 88–92%
 - Non-rebreather mask 10–15L/min
- Put in recovery position on left side — F 2.4
- Put in IV cannula (CPM p84)
- Manage as eclampsia — even if woman epileptic
 - Give **magnesium sulfate** IV loading dose — 4g over 15 minutes (p23)
 - Start **magnesium sulfate** IV infusion (p24)
 - *OR* if no IV access — give magnesium sulfate IM (p23)
- If fit continues for more than 3–5 minutes *OR* fits again
 - Repeat **magnesium sulfate** IV loading dose (p23)
 - Get ready to give **midazolam** — see *Fits — seizures* (CARPA STM p57), **medical consult**
 - Magnesium sulfate and midazolam together can put breathing at risk. Be ready to manage airway and breathing
- Monitor RR, ankle jerks
- Check BP, BGL, electrolytes
- If BP stays more than 160/110 — see *Severe pre-eclampsia* (p21)



2.4

Check

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

- Mother
 - Temp, pulse, RR, BP, O₂ sats — work out REWS (*p8*)
 - BGL, coma scale score (*CARPA STM p74*), pupil reactions (*CARPA STM p73*), vaginal loss, signs of labour
 - Observations every 15 minutes for at least 1 hour after seizure
 - **Do not** leave woman unattended
- Baby — heart rate (*p101*), fundal height (*p98*), movements if possible
- Examine carefully for sickness or injury that may have caused fit — consider meningitis (*CARPA STM p101*), head injury (*CARPA STM p72*), stroke

Do

- **Medical consult** — doctor should consult obstetrician early
 - Talk with doctor about sending to hospital, BP control, steroids for fetal lung maturation
 - **Do not** let woman eat or drink anything
 - See *Severe pre-eclampsia* (*p21*)
- If airway blocked or noisy breathing — put in nasopharyngeal (*CPM p46*) or oropharyngeal (*CPM p45*) airway. If they spit out or gag — leave out
 - Consider gentle suctioning of mouth
- Be ready to manage airway and breathing
- Use tilt/wedge to position on left side
- If BGL less than 4mmol/L — see *Low blood glucose (hypoglycaemia)* (*CARPA STM p91*)
- Put in indwelling urinary catheter (*p281*)
 - Do U/A for protein
 - Measure urine output hourly
- Put in second IV cannula (*CPM p84*)

Severe pre-eclampsia

- Severe high BP — systolic BP 170mmHg or more *OR* diastolic BP 110mmHg or more
- Severe pre-eclampsia — severe high blood pressure and one or more other signs or symptoms, see Table 2.9. **Medical emergency**

Fitting (eclampsia) is serious consequence of severe pre-eclampsia.

- **If woman fitting at presentation** — see *Fits in the second half of pregnancy (p19)*

Table 2.9: Signs and symptoms of pre-eclampsia and eclampsia

Body organ or system	Signs	Symptoms
Cardiovascular	<ul style="list-style-type: none"> • High BP • Platelet count less than 100,000/microL • Bleeding from venipuncture 	<ul style="list-style-type: none"> • Swollen ankles
Lungs	<ul style="list-style-type: none"> • Pulmonary oedema 	<ul style="list-style-type: none"> • Breathlessness
Kidneys	<ul style="list-style-type: none"> • More than 2+ protein on U/A • Creatinine more than 90micromole/L 	<ul style="list-style-type: none"> • Low urine output
Liver	<ul style="list-style-type: none"> • Tender abdomen — right upper quadrant 	<ul style="list-style-type: none"> • Severe epigastric or right upper abdomen pain • Nausea and vomiting
Neurological	<ul style="list-style-type: none"> • Fits • Brisk reflexes, muscle spasms • Stroke 	<ul style="list-style-type: none"> • 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 O₂ sats 94–98% *OR* if moderate/severe COPD 88–92%
 - Non-rebreather mask 10–15L/min
- Put in IV cannula (*CPM p84*), largest possible
 - Put second IV cannula in other arm when you have time
- Put in indwelling urinary catheter as soon as possible (*p281*)

Medical consult — doctor **must talk with obstetrician** about treatment.

- Treatment options include
 - Sending to hospital
 - Giving medicines to lower BP (eg nifedipine, hydralazine)
 - Giving magnesium sulfate to prevent fits

- 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

Check

- Full set of baseline observations
 - Mother
 - Temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#))
 - Urine output, coma scale score ([CARPA STM p74](#))
 - Baby — heart rate
- U/A for protein, send urine for MC&S

Do not

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

Do — if directed by doctor

Treatment to lower BP

- Give **normal saline** IV 250mL at start of treatment
- **If asked to give nifedipine** —
 - Give **nifedipine** oral (IR) – 20mg
 - **Do not** use slow-release 30mg or 60mg tablets
 - **Medical consult** 45 minutes after giving
 - If BP still high — usually give second dose **nifedipine** oral (IR) – 20mg
 - If BP still high 45 minutes after second dose — **medical consult**
- **If asked to give hydralazine** —
 - Give **hydralazine** IV bolus. See *Giving hydralazine* ([p24](#))
 - **Medical consult** 20 minutes after giving
 - If BP still high — usually give second bolus dose **hydralazine** IV
 - Doctor may ask for maintenance hydralazine infusion ([p25](#))
- Keep very careful fluid balance charts throughout
- If diastolic BP falls below 90mmHg — **medical consult**

Treatment to prevent fits

- Give loading dose of **magnesium sulfate**, then give maintenance treatment
 - See *Giving magnesium sulphate* ([p23](#))

High dose **nifedipine** and high dose **magnesium sulfate** together can interact and cause serious low BP and/or breathing problems. Use with care.

- If using **nifedipine** — give **magnesium sulfate** as infusion **without** loading dose. Can give bolus dose later if woman has fit

While waiting for evacuation

- Check pulse, RR, BP, O₂ sats according to schedule for medicine/s given
 - If magnesium sulfate infusion running — also check knee jerk
- Check every hour — temp, urine output, coma scale score (*CARPA STM p74*), baby's heart rate
- When fitting and BP controlled, do first check in labour (*p158*), even if no contractions

Giving medicines for pre-eclampsia

Take care not to overload with IV fluids

- If hydralazine and magnesium sulfate infusions — already getting 45–125mL of fluid/hour
- **Do not** give extra fluid, unless directed by doctor
- **Monitor fluid balance very carefully**

Giving magnesium sulfate

- Loading dose — must be given IV
- Maintenance treatment — IV or IM
- Overdose — treat with calcium gluconate 10%
 - Have 10mL dose ready before starting treatment

Check

- Pulse, RR, BP, O₂ sats, urine output, knee jerk
 - Loss of knee jerk can be first sign of magnesium overdose
- Before starting magnesium sulfate woman must have
 - Knee jerk
 - RR more than 16 breaths/min
 - Urine output more than 25mL/hr
- During treatment
 - RR, BP, knee jerk every 15 minutes for at least 2 hours
 - If stable after 2 hours — repeat every hour
 - O₂ 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 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 – 4g
 - Add 4g (8mL) to 100mL **normal saline** (mini bag). Connect to side-arm of main giving set, run over 15–20 minutes (300mL/hr)

Maintenance

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 every 4 hours – 5g (10mL) until woman evacuated

Stop maintenance treatment and do medical consult if

- Knee jerk absent
- RR less than 16 breaths/min
- Urine output less than 25mL/hr

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

- Stop infusion
- Start resuscitation — see *Life support — DRS ABC (CARPA STM p10)*
- 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
- **Medical consult** as soon as possible

Giving hydralazine

Check

- Check pulse, RR, BP, O₂ sats, baby's heart rate
- During treatment — pulse, RR, BP, O₂ 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 **hydralazine** IV through own line — **do not** use same line as magnesium sulfate

IV bolus

- Mix 20mg ampoule **hydralazine** with 2mL **normal saline** to dissolve **THEN** add **normal saline** to give 20mL hydralazine at 1mg/mL
- Inject **hydralazine** slowly over 2 minutes – dose as directed by doctor

IV maintenance infusion

- Give **hydralazine** IV infusion – 50mg at 6mg/hr
 - Add 50mg (2½ ampoules) to 500mL normal saline
 - Label bag 'Hydralazine 50mg in normal saline 500mL'
- If no infusion pump available — put 100mL of **hydralazine** solution into paediatric chamber, connect to 20 drops/min giving set
 - Start infusion at 60mL/hr (hydralazine 6mg/hr)
- **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)

Preterm labour

Regular contractions (labour) before 37 weeks pregnant.

Urgent problems

- Baby may be breech or other abnormal presentation
- Birth may be difficult, or happen very fast
- Membranes and amniotic fluid may be infected — intrauterine infection ([p31](#))
- Baby may have breathing problems and/or low BGL when born

Risk factors

- History of preterm labour and birth
- Premature rupture of membranes ([p29](#))
- Infection — UTI ([p149](#)), kidney ([p151](#)), STI ([p245](#)), GBS ([p147](#))
- Medical problems — diabetes ([p118](#)), high BP ([p127](#))
- Obstetric problems — pre-eclampsia ([p21](#)), cervical incompetence, fetal death
- Too much amniotic fluid
- Multiple pregnancy (eg twins)
- Bleeding in second half of pregnancy ([p14](#))
- Acute abdominal conditions (eg appendicitis [CARPA STM p23](#))
- Injuries to mother ([p34](#))

Do first — if birth about to happen

- Call for help — but don't leave woman
 - Get **midwife/doctor/obstetrician** on speaker phone, if none locally
 - Arrange to send to hospital, if you have time
- See *Getting ready to birth baby* ([p161](#)) and *Newborn resuscitation* ([p70](#))
- If baby's bottom or foot coming first — see *Breech birth* ([p47](#))

Ask

- Other abdominal pain
- Urine problems — burning, passing urine often
- Vaginal discharge or bleeding
- If membranes ruptured (pad or pants wet, history of fluid loss from vagina) — colour and amount of fluid
- Baby movements

Check

- Temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#))
- If urine problems — U/A, send urine for MC&S
- Do **sterile speculum exam** after she has been lying down (not flat on back) for 10 minutes, if skilled
 - Use sterile gloves and sterile speculum. Wash vulva with sterile **normal saline**. **Do not** use lubricant

- Gently insert sterile speculum and look for
 - 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* straight away (p42)
 - Discharge from cervix
 - Pooling of fluid at back of vagina
 - Ask woman to cough or perform Valsalva manoeuvre — look for fluid coming out of cervix
- If fluid present — do test for amniotic fluid to confirm PROM, if available (eg *AmniSure*)
- If 24–36 weeks pregnant and fluid not present — do test for preterm labour, if available (eg *Actim Partus*, *FfN*)
- 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
- Leave sterile pad in place, check after 10–15 minutes for any fluid leakage

Do

- See *Labour and birth* (p158)
- **If woman bleeding** — see *Bleeding in pregnancy* (p14)
 - **Do not** do digital vaginal exam
- **Medical consult.** Doctor should **talk with obstetrician** about
 - Sending to hospital
 - **Stopping labour** (p32)
 - Antibiotics — may need treatment for GBS (p147)
 - 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
 - Special care needed
- If being evacuated — continue routine labour observations
 - Baby's heart rate. Use doppler if available
 - Straight after a contraction measure for at least 1 minute
 - Repeat every 15 minutes
 - Woman's observations
 - Repeat pulse hourly
 - Check temp and BP every 4 hours
 - If any observations abnormal — repeat in 30 minutes
 - Contractions
 - Over 10 minutes — how often, how long, how strong
 - Repeat every 30 minutes
 - Vaginal fluid loss — colour of liquor, blood loss



- Every 2 hours — ask woman to try to pass urine, do U/A
- Every 2–4 hours — palpate baby ([p99](#)), check that head (or presenting part) is moving down into pelvis

Consider health of mother and fetal maturity when deciding safest place to give birth — health centre, regional hospital, tertiary centre.

Threatened preterm labour

- If labour settles (does not progress to birth) — make sure clear management plan provided by obstetrician for rest of pregnancy

Premature rupture of membranes

Fluid loss from vagina before start of labour and labour not established within 4 hours of confirmed membrane rupture.

- Can happen
 - At term (37 or more weeks pregnant) — PROM
 - Preterm (20–36 weeks pregnant) — PPROM
 - Fetus very unlikely to survive if born before 24 weeks — but if unsure of dates manage as PPROM until dates confirmed

Urgent problems

- Preterm labour and birth may occur
- Membranes and amniotic fluid may be infected — intrauterine infection ([p31](#))
- Cord may come out before baby — cord prolapse ([p42](#))
- Placenta may separate from uterus before baby is born — placental abruption ([p17](#))

Symptoms and signs

- Sudden gush of fluid from vagina or ongoing fluid leak
- Sometimes can be hard to tell if fluid from vagina or urine

Check first

- Baby's heart rate

If baby's heart rate absent or abnormal (less than 110 or more than 160 beats/min) —

- Change woman's position
- Check baby's heart rate again
- If heart rate still abnormal — check for cord prolapse
 - If cord at vulva or in vagina — see *Cord prolapse* straight away ([p42](#))
 - If no cord prolapse — **medical consult**

Check file notes

- How many weeks pregnant (gestation)
- Due date for birth
- Obstetric ultrasound report. Is placenta clear of opening of uterus
- Swab results — GBS, STIs, other infection

Ask

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

Check

- Temp, pulse, RR, BP, O₂ sats — work out REWS (p8). Repeat every 30 minutes
- Baby's heart rate
- Vulva — look for sores, especially herpes (p256)
 - If you see cord — see *Cord prolapse* straight away (p42)
- Vaginal loss — colour, amount, smell, blood
 - If bleeding from vagina — see *Bleeding in pregnancy* (p14)
 - Put pad between woman's legs. Change pad at each check
 - If bleeding — save and weigh all pads (1g increase = 1mL loss)
- U/A on MSU, send for MC&S
 - Check vulva for cord prolapse (p42) before sending to toilet for urine sample
- Abdominal assessment (*CARPA STM p18*) — tenderness, rebound, guarding
- Uterus
 - Tender, soft or hard
 - Fundal height (p98)
- Position of baby — is it coming head first
- Contractions — see *Labour and birth* (p158)
- Standard STI check (p238)
- Do **sterile speculum exam** of vagina and cervix to look for amniotic fluid, if skilled
 - Use sterile gloves and sterile speculum. Wash vulva with sterile **normal saline**. **Do not** use lubricant
 - Look for pooling of fluid at back of vagina
 - Ask woman to cough or perform Valsalva manoeuvre — look for fluid coming out of cervix
 - Do test for amniotic fluid to confirm PROM, if available (eg *AmniSure*)
 - Also look for
 - 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* straight away (p42)
 - Discharge from cervix
 - 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

Do not

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

Do

- Lie woman on left side
- Explain what is happening and why

- Put in IV cannula (*CPM p84*), largest possible
 - Flush with 5mL **normal saline** every 4 hours

Medical consult — doctor should talk with obstetrician about

- Sending to hospital
- Antibiotics
 - If PPROM (less than 37 weeks) — give **amoxi/ampicillin** IV every 6 hours for 48 hours – 2g
 - *THEN amoxicillin* oral 3 times a day (tds) for further 5 days – 250mg
 - *AND erythromycin* oral 4 times a day (qid) for further 5 days – 250mg
 - If allergic to penicillin — give **erythromycin** oral 4 times a day (qid) for 7 days – 250mg
 - If PROM (37 weeks or more) and more than 18 hours or unknown time since membranes ruptured — will need treatment for GBS (*p147*)
 - See *Intrauterine infection (chorioamnionitis) (below)*
 - If at risk of endocarditis — give preventive antibiotics (*CARPA STM p298*)
- 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
- Special care needed

- All women out bush 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

Intrauterine infection (chorioamnionitis)

- T more than 38°C
- Woman's pulse more than 100 beats/min
 - Check woman's pulse with pulse oximeter at same time as baby's heart rate using doppler to distinguish between the two
- Baby's heart rate more than 160 beats/min
- Tender uterus
- Smelly vaginal discharge or pus

Do

- **Medical consult**
- Give **amoxi/ampicillin** IV single dose – adult 2g
 - *AND gentamicin* IV single dose (doses *p373*)
 - *AND metronidazole* IV single dose – adult 500mg
- *THEN amoxi/ampicillin* IV every 6 hours (qid) – adult 1g
 - *AND metronidazole* IV every 12 hours (bd) – adult 500mg
- If allergic to penicillin — **medical consult**
- If delay in sending to hospital and advised by doctor — give **gentamicin** IV once a day (doses *p373*)

Stopping labour (tocolysis)

Use of medicines to stop labour. May not work if labour advanced.

Consider stopping labour if

- Preterm labour ([p26](#)) and 24–36 weeks pregnant
- Term labour (37 or more weeks pregnant) but transfer to hospital will give better outcomes. Decision based on medical and obstetric problems, staff expertise

Check

- Do first check in labour ([p158](#))
- Check medical history especially for RHD, thyroid problems, diabetes, kidney disease, high BP, stomach ulcers, asthma

Do first

- **Always do medical consult** before starting treatment
 - Decide whether to stop labour, which medicine to use
 - Doctor arranging evacuation talks with obstetrician at receiving hospital
- For rest of management see *Preterm labour* ([p26](#))

Nifedipine

Generally very well tolerated. Side effects — headache, fast pulse, flushing.

If woman has significant heart disease — use nifedipine with caution. If unsure — **medical consult**.

- RHD common in Indigenous communities, sometimes undiagnosed

- Nifedipine comes in a number of different formulations
 - **Nifedipine (IR) 20mg tablets** must be used in this protocol
 - **Do not** use controlled release 'OROS' 30mg or 60mg tablets

Check

- Woman's temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#)) **AND** baby's heart rate, contractions
 - Before giving nifedipine
 - **THEN** temp every 4 hours
 - **AND** other observations every 15 minutes
- If woman stable — **medical consult** about doing observations less often
- POC test for Hb

Do

- Put in IV cannula ([CPM p84](#))
 - Give **normal saline** 1L — 500mL as quickly as possible, then 125mL/hour

- Give **nifedipine** oral every 30 minutes for up to 3 doses – 20mg/dose. Total 60mg
 - Crush or chew first 2 doses to make it work faster
 - **Do not** give more than 40mg in 1 hour
 - If woman vomits in first hour — **medical consult**
- If systolic BP less than 100mmHg or short of breath — **medical consult**
 - May need to stop nifedipine
- If BP stable — **medical consult** about giving **nifedipine** every 6 hours – 20mg. Maximum dose — 160mg in 24 hours
- **If contractions do not stop** — doctor may suggest different treatment
- If high dose of nifedipine given and prophylaxis needed to prevent fitting in pre-eclampsia —
 - Only give magnesium sulfate as IV infusion (maintenance) ([p24](#))
 - **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.

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
 - Be aware of mandatory reporting requirements in your state/territory

Best thing for baby is to take good care of mother.

- Assess and resuscitate woman first
- Assess baby (see *Uterus and baby p35*)
- Head-to-toe check of woman. See *Do first (below)*

Abdominal injury in pregnancy

- Any abdominal injury in pregnancy can be serious
- Usual signs of abdominal injury not reliable
 - Soft, non-tender abdomen does not rule out serious injury
- Placental abruption (*p17*) can happen even after minor abdominal injury
- In late pregnancy baby can be directly injured. Fetal distress (*p40*) may not be obvious until hours after injury

Do first

- Assessing trauma — primary and secondary survey (*CPM p35*)
 - Initial priorities same as for any injured person

Important extra points about Airway, Breathing, Circulation in pregnancy —

A — Airway

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

B — Breathing

- Give **oxygen** to target O₂ sats 94–98% *OR* if moderate/severe COPD 88–92%
 - Nasal cannula 2–4L/min *OR* mask 5–10L/min
 - Non-rebreather mask 10–15L/min

C — Circulation

- **Position woman on left side** with uterus pushed over to left, for transport and assessment. After 20 weeks pregnant, uterus presses on major blood vessels if woman flat on back — causes low BP, fetal distress
 - If spinal injury suspected — immobilise (*CPM p64*) then tilt spinal board 15–30 degrees to left by putting wedge or rolled-up blanket under it
 - If positioning on left side or lateral tilt not possible — use manual displacement of uterus
 - Stand on woman's left, put both hands around pregnant abdomen, pull abdomen toward yourself

- Detecting shock is difficult — pregnant woman can lose up to 1200–1500mL of blood before any changes in pulse or BP
 - **Any change** indicating shock is very serious
 - Temp, pulse, RR, BP O₂ sats — work out REWS ([p8](#))
 - If shock suspected — give 1L **normal saline** or **Hartmann's solution** as fast as possible, even if BP normal

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

Ask or check file notes

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

Check

If woman gets worse at any time during examination — see *Assessing trauma — primary and secondary survey* ([CPM p35](#)).

- Temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#))
- Abdomen
 - Shape of abdomen, bruising, surgical scars
 - Feel abdomen ([CARPA STM p19](#)) for tenderness, rebound tenderness, rigidity, guarding
- Uterus and baby
 - Feel for tenderness, uterus soft or hard
 - Measure fundal height
 - Assess position of baby
 - Check baby's heart rate. **First sign of serious blood loss may be fetal distress** ([p40](#)) — baby's heart rate less than 110 or more than 160 beats/min is abnormal
 - Feel for contractions ([p158](#)). Can miss if unconscious, head or spinal injury
- Vulva and perineum
 - Look for blood loss, fluid coming from vagina or urethra
 - Vaginal loss — colour, amount, smell. Put pad between legs, replace with clean pad each time vulva checked
- Urine
 - U/A — protein or blood not normal in pregnancy
 - If unable to pass urine — put in indwelling urinary catheter ([p281](#)) after head-to-toe examination

Do not

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

Do

- If results not known, take blood for FBC, blood group and antibodies, Kleihauer test
- If abdominal injury and mother RhD negative with no Anti-D antibodies —
 - **Medical consult**, send to hospital
 - Woman will need RhD-Ig IM
 - Under 12 weeks pregnant and miscarriage or painful vaginal bleeding – 250 international units
 - Over 12 weeks pregnant – 625 international units
 - Over 20 weeks pregnant – start with 625 international units. Kleihauer test results will determine if more needed

Medical consult and send to hospital

- Woman with serious injury
- Woman more than 24 weeks pregnant
 - Baby needs cardiotocogram (CTG) even if woman appears to have no or minor injury
- Woman with abdominal pain, pelvic injury, vaginal fluid loss, bleeding

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
- If woman having contractions but doesn't have 'urge to push' — **medical consult**, see *Labour and birth* (p158)

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

- Don't panic — birthing is a natural process
- Call for help. Don't leave woman by herself

Ask helper to get equipment (p156)

- 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 in case 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 likely to be close
- If umbilical cord at vulva — see *Cord prolapse* straight away (p42)
 - If baby's foot or bottom coming first — see *Breech birth* (p47)
- If you can't see baby and perineum not bulging — **medical consult**, see *Labour and birth* (p158)

If time

- Ask helper to get woman's pregnancy record. Check
 - How many weeks pregnant (gestation)
 - Medical complications (eg diabetes, anaemia)
 - GBS results
- Check baby's heart rate
- If membranes ruptured (waters broken) —
 - Ask when
 - Look at colour of waters (liquor)
 - Clear, pink, clear with blood mixed in is normal
 - Meconium (brown/green), means baby has passed faeces
- Put in IV cannula (*CPM p84*), largest possible, 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 position that feels comfortable — upright position, kneeling on all fours, 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 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
- When head is born
 - 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, rest of baby's body will 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 shoulder born — gently ease baby's head toward woman's abdomen as she pushes out posterior shoulder

If shoulders do not come out — they could be stuck. **This is an emergency.** See *Stuck shoulder (shoulder dystocia)* urgently (*p44*).

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, remove wet towel. 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 (p70).

- If baby breathing, good muscle tone, becoming pink — see *Labour and birth* – *Immediate care of baby* (p164) and follow remainder of steps for care of mother and baby

Fetal distress in labour

Signs of fetal distress

- Abnormal fetal heart rate between contractions — less than 110 or more than 160 beats/min
- Passing meconium (faeces) in uterus — meconium-stained liquor (green/brown colour). Only seen after waters break (membranes rupture)

Urgent problems

- Baby may not be getting enough oxygen, could be very sick, may die
- Baby may inhale meconium during or straight after birth
- Baby may need resuscitation at birth ([p70](#))
- Mother may have concealed bleeding — see *Bleeding in pregnancy* ([p14](#))

Labour with signs of fetal distress best managed in hospital.

Check

- Mother's temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#))
- Look at perineum to see if cord has dropped out. If skilled, do digital vaginal exam to check for cord prolapse and assess cervical dilatation
 - If cord seen or felt — see *Cord prolapse* straight away ([p42](#))
- Check baby's heart rate during and after 2–3 contractions ([p101](#)). Use doppler if available
 - Should be 110–160 beats/min and regular between contractions
 - Normal for it to drop during contraction if birth close, but important that it comes back up as soon as contraction finished

Do not

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

Do

- Call for help
- **Medical consult, send to hospital urgently**
- If woman lying down — keep on her left side, as best for baby
 - Try to keep her calm
- Routine oxygen for mother no longer recommended for fetal distress
 - If mother bleeding, has low BP, trouble breathing — give **oxygen** to target O₂ sats 94–98% *OR* if moderate/severe COPD 88–92%
 - Nasal cannula 1–2L/min *OR* mask 5–10L/min
- Put in IV cannula ([CPM p84](#)), largest possible in preparation for birth
- Make sure woman's bladder is empty — full bladder may stop descent of baby's head (or presenting part)

Medical consult about

- Sending to hospital — continue observations until evacuation
- If woman in early labour — may be possible to use medicines to stop labour ([p32](#))
- Antibiotics
- IV fluids
- Pain relief — **do not** give opioids without **obstetrician consult**. Can cause respiratory depression in baby at birth
- Management of other problems (eg maternal fever, high BP, bleeding)

If labour progressing quickly

- Follow Labour and birth ([p158](#))
- Be ready to resuscitate baby ([p70](#))
- Be ready to do episiotomy if needed ([p56](#))

If signs of fetal distress go away — still need to send woman to hospital.

Cord prolapse

Cord coming out before baby. Cord drops out of uterus before head or presenting part delivers.

Emergency

- Cord can be compressed between baby and pelvis during a contraction and/or spasm in colder outside temperature
 - Both stop blood supply from placenta, baby could die
- Aim is to take pressure off the cord

Consider cord prolapse if

- Woman has ruptured membranes and baby's heart beat becomes very slow, irregular or disappears, especially if baby preterm
- Woman feels something drop out of vagina
- Cord may be at entrance to vagina, out of vagina — F 2.5, or at vulva



2.5

Check

- Must do digital vaginal exam to diagnose cord prolapse unless cord visible outside vagina. Cord is a smooth pulsating band

- Handle cord as little as possible
- Sterile gloves best, but don't delay treatment if not available quickly
- Calmly tell woman what's happening. You need her help and attention

Do not

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

Do — if birth not about to happen

- Call for help
- If cord outside vagina — use sterile gloved hand to gently put it back in vagina to keep warm
- Ask woman to
 - Get into knee-to-chest position — F 2.6
 - *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 — F 2.7



2.6



2.7

- **With sterile gloved hand, put 2 fingers into vagina and push baby's head (or presenting part) up off the cord until baby is born**
 - Get help — this is very tiring

- Ask helper to
 - Do **medical consult** about
 - Sending woman to hospital straight away
 - Medicines to stop labour (p32)
 - Calm and reassure woman
 - If likely to be long time before delivery — put in indwelling urinary catheter (p281) 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 reclamp catheter. Do more often if giving IV fluids
 - Monitor baby's heart rate (p101)
- If cord stops pulsating and baby's heart beat can't be found — likely that baby has passed away
 - **Medical consult**
 - Comfort mother

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 next few minutes
- Ask/help woman to get into upright position — F 2.8 for examples
- Encourage woman to push as hard as she can and birth baby as soon as possible. See *Labour and birth* (p158)
 - **Be aware:** Baby may be in breech position. See *Breech birth* (p47)
- Be ready to resuscitate baby (p70)



2.8

Stuck shoulder (shoulder dystocia)

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

Emergency

- If shoulder stuck too long — risk that baby will not get enough oxygen (hypoxia), have brain damage or die
- **Do not** use a lot of force on baby's head or neck. Will not move shoulders, 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') — F 2.9
- Body does not birth with next contraction



2.9

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
 - If second helper — have them check time as you go through steps
- Consider episiotomy ([p56](#))
- Try each step for 30 seconds before going to next
- Start steps with or without contraction
- Try each step in order until one works. When first shoulder released, other shoulder should follow and baby's body will be born
- Then see *When shoulder released* ([p46](#))

Step 1 (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) — F 2.10
- Ask woman to push. At same time, using palms of your hands, apply **gentle** steady traction (pull) to baby's head downward toward mother's anus/floor to release top shoulder — F 2.10



2.10

If doesn't work (no progress) — Step 2 (Rubin 1 manoeuvre)

- 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, put hands just above pubic bone, and push baby's back down and forward — F 2.11
 - 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



2.11

If this doesn't work — Step 3

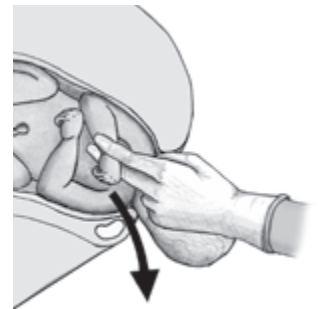
- Help woman onto all fours, in knees-to-nipples position
- Using palms of your hands apply **gentle** traction (pull) on baby's head downward toward woman's front — F 2.12



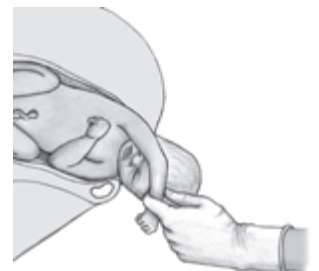
2.12

If this doesn't work — Step 4

- Woman in same position as Step 3 — on all fours, knees-to-nipples
- **Try to release uppermost arm**
 - 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 — F 2.13, sweep hand forward toward baby's nose and over face — F 2.14
 - 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 down toward bed (ground). Top shoulder should come out



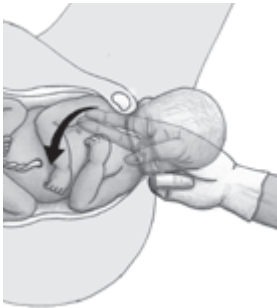
2.13



2.14

If this doesn't work — Step 5 (Woods' screw manoeuvre)

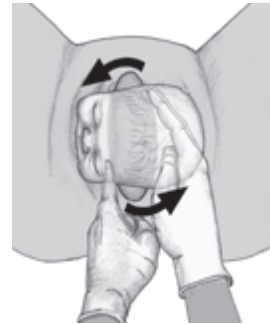
- Roll woman **onto her back** and **try to turn (rotate) baby's shoulders**
 - Put 2 fingers into vagina near anus — F 2.15. Slide fingers up baby's back and find shoulder blade (scapula) behind top shoulder
 - At same time put 2 fingers of your other hand in front of bottom shoulder — F 2.16
 - Push forward on top shoulder and backward on bottom shoulder at the same time — F 2.17
- If you feel shoulders turn — using palms of your hands apply **gentle** traction (pull) on baby's head again



2.15



2.16



2.17

If these steps don't free baby's shoulder — breathe in, stay calm, 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 *After the birth* (p164)
- Baby will probably need resuscitation (p70)

Note: Woman more likely to have postpartum haemorrhage (p58).

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 (p42), head getting stuck
- Baby more likely to pass faeces (meconium). May be just before birth, earlier in labour may mean baby is distressed
- Baby's oxygen supply may be decreased. **Be ready to resuscitate baby** (p70)
- Only do digital vaginal exam if skilled

Equipment

- Birth and resuscitation equipment (p157)
- Sterile Sims' speculum — F 2.18



2.18

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
- Try to remain calm and confident
- Get ready to send to hospital

If in labour

- Unless birth is about to happen, **try to stop labour** (p32). **Medical consult**
- Make sure woman has emptied her bladder

If labour continues and birth likely

- Put in IV cannula (CPM p84), largest possible
 - Flush with 5mL **normal saline**
- If waters break — check for cord prolapse (p42). 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

• 2 methods to manage breech birth

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



Do — normal (unassisted) breech birth

- Next steps outline birth that progresses normally
- If no progress with every contraction — see *Assisted breech birth* (p49)
- Have midwife/doctor/obstetrician on speaker phone, if none locally

- Make sure woman 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 — F 2.19
 - Or other comfortable position — F 2.20 for examples
- Gravity will help with birth. Be ready as it can happen quickly, especially if baby preterm



2.19



2.20

- Check baby's heart rate after each contraction
- Reassure woman that everything is going well, she is doing a wonderful job
- Keep your 'hands off the breech' — **do not** touch the baby
- If progress seems slow — ask woman to change to another upright position
- Woman should push when she wants to — unless baby distressed. If distressed — see *Assisted breech birth* straight away (p49)
- **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 women — you will see baby's abdomen — F 2.21
 - If baby starts to turn so it is facing the same way as woman — see *Assisted breech birth* to help turn it back (p49)



2.21

- Watch for progress with each contraction — F 2.22. 'Hands off' — F 2.23 but be ready to catch baby — F 2.24
- Rub dry vigorously with warm towel. Breech babies often need more stimulation, may need resuscitation ([p70](#))



2.22



2.23



2.24

Do — assisted breech birth

- **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

- If baby's heart rate less than 110 beats/min (fetal distress) *OR* heart rate doesn't return to normal after a contraction *OR* 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 — F 2.25



2.25

- 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

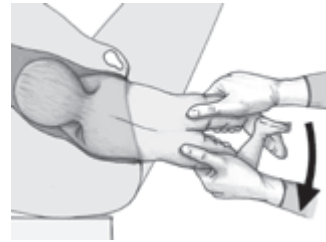
Remember: If you are facing woman, you should see baby's back.

If arms not coming and not seeing progress

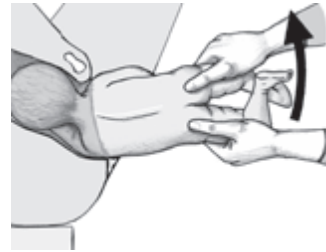
- Need to **help birth** by **turning baby** to help arms and shoulders out

Remember: 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.

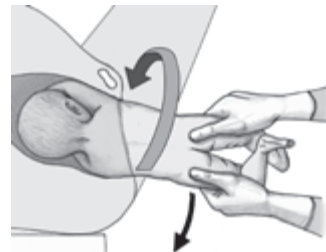
- Turn baby on its side, with a contraction. Lower baby to let baby's weight bring top arm out — F 2.26
- If baby's arm doesn't come — put finger into vagina along baby's back, over its shoulder and down chest, sweeping arm out
- Lift baby up to let other arm come out — F 2.27
- If you see shoulder but 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 shoulders should be born with next push. Usually happens without difficulty



2.26



2.27

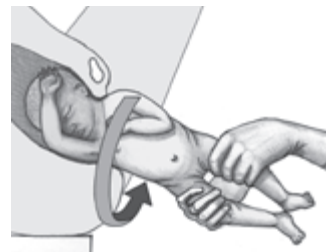


2.28

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 — F 2.28
- If arm doesn't come out — put finger in vagina along baby's back, over its shoulder and down chest, sweeping arm out

- When turning baby
 - Keep baby's back opposite to woman's back at all times
 - Try to turn baby during a contraction



2.29

- To get other arm out — turn baby back another half circle (180°) in opposite direction — F 2.29, 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, let baby hang — F 2.30



2.30

To deliver head

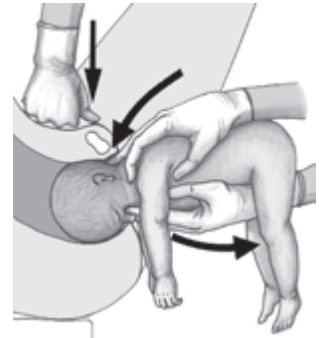
- Let baby hang and birth slowly until you can see back of baby's neck (nape) — F 2.31
- Ask woman to pant — not push. Let head come out **slowly**



2.31

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 — F 2.32
- Helper pushes down with closed fist just above pubic bone (suprapubic pressure) — F 2.32. Helps to keep baby's head flexed
- Put your other hand across baby's shoulders and push your middle finger against back of baby's skull (occiput) — F 2.32
- 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 — F 2.33



2.32

If head still won't come

- 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, talk woman through what you are doing



2.33

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

After baby born

- See *After the birth* (p164) and follow rest of steps for care of mother and baby

Follow-up

- Talk with mother and others there, explain what you were doing
- Talk with doctor and midwife about follow-up for mother and baby
- If birth traumatic — baby will need to be sent to hospital
- All breech babies need to be seen by paediatrician to check hips and for congenital abnormalities that may have caused breech position

Birth of twins

Emergency medical procedure. Rare in remote context but may happen if woman hasn't had antenatal care or can't get to hospital in time.

Urgent problems

- Preterm labour
- One or both babies not coming head first (eg breech presentation)
- Cord may come before either baby (cord prolapse)
- Fetal distress, especially of second baby
- Woman more likely to bleed heavily after birth (postpartum haemorrhage)
- If not known to be twin pregnancy and oxytocin given after first born — cervix may close before second twin born

Do first

- Call for help
 - Get **midwife/doctor/obstetrician** on speaker phone, if none locally
 - Arrange to send to hospital
- Do first check in labour ([p158](#))
- Reassure woman, explain what is happening, have someone stay with her for support

If in early stages of labour

- **Medical consult** about stopping labour ([p32](#))

If membranes rupture — check for cord prolapse.

If cord seen at vulva or felt just inside vagina — see *Cord prolapse* straight away ([p42](#)).

If labour continues

- Have helper do **medical consult**, keep them on speaker phone
- Follow Labour and birth ([p158](#)) and *ALSO*
 - Put in second IV cannula (*CPM p84*), largest possible
 - Give **normal saline** at 125mL/hr
 - **Do not** let woman eat or drink anything — may need operation

You will also need

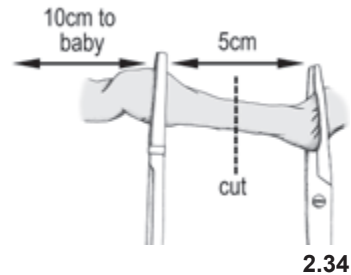
- 1–2 people to look after each baby
- 2 sets of birth and resuscitation equipment ([p156](#))
- 2 oxygen sources
- 2 suction attachments
- 2 sets of 2 cord clamps labelled 'Baby 1 – Surname' and 'Baby 2 – Surname'
- 2 sets of 2 name bands, labelled 'Baby 1 – Surname' and 'Baby 2 – Surname'
- Oxytocin infusion (40 international units in 500mL normal saline), infusion pump if available
 - **Do not** start until after **second baby born** and placenta delivered

The birth

First baby

Birth of first baby

- If baby coming head first — see *Birthing baby* (p161)
- If baby is coming bottom or foot first — see *Breech birth* (p47)
- Then continue with this protocol
- **Do not** give oxytocin until after second baby born
- **Do not** deliver placenta until after second baby born
- Clamp and cut cord
 - Some cultures like 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 — F 2.34
 - Cut cord **between** the 2 clamps with sterile blunt-end scissors
 - **Do not** take clamps off after cutting
- Dry and wrap baby, give to helper to assess, resuscitate (p70), keep warm (p182) as needed. See *Immediate care of baby* (p164)



Check — after birth of first baby

- Woman's pulse and BP
- Heart rate of second twin
- Vaginal blood loss
- Colour of liquor
- Try to work out position of second baby by palpating uterus (p99) — head or bottom first
- Feel for contractions — often stop for up to 5 minutes after first birth

Midwife/obstetrician consult about

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

Let them know straight away if

- Woman bleeding heavily
- Baby's heart rate less than 110 or more than 160 beats/min
 - Try changing woman's position and check baby's heart rate again
 - Lie woman on her left side

If no contractions after 5 minutes

- Check vaginal blood loss and baby's heart rate ([p101](#)) at least every 5 minutes
- Keep woman on her left side, reassure her, keep comfortable
- If vaginal blood loss small and baby's heart rate normal — wait for evacuation to hospital
- Consider asking mother to breastfeed Baby 1 to stimulate contractions

Second baby

If labour continues

- If baby coming head first — see *Birth baby* ([p161](#))
 - If baby coming bottom or foot first — see *Breech birth* ([p47](#))
 - If another part of baby felt — **medical consult** straight away
- 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 ([p42](#))

After birth of second twin

- 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 — F 2.34
 - Cut cord **between** the 2 clamps with sterile blunt-end scissors
 - **Do not** take clamps off after cutting
- Dry and wrap baby, give to helper to assess, resuscitate ([p70](#)), keep warm ([p182](#)) as needed. See *Immediate care of baby* ([p164](#)) and follow remainder of care for baby
- Check there isn't a third baby
- **If no more babies** — give **oxytocin** IM single dose – 10 international units in thigh
- Deliver placenta, or if 2 placenta, deliver both together
 - If **oxytocin given** — see *Delivering placenta by controlled cord traction* ([p166](#))
 - If **oxytocin not given** — see *Delivering placenta by maternal effort* ([p167](#))
- After placenta/s delivered, start **oxytocin** infusion (40 international units in 500mL **normal saline**) at 125mL/hr
 - If no infusion pump — monitor carefully
 - **Medical consult** about how long to continue
- Collect cord blood from both cords ([p165](#)). Label 'Baby 1 and Surname' and 'Baby 2 and Surname'
- While waiting for evacuation — see *Newborn needing special care* ([p76](#)) and *Care of mother for first 24 hours after the birth* ([p171](#))

Episiotomy

- Surgical cut (incision) in perineum to make opening to vagina larger
- Episiotomy **not** done routinely
- Emergency procedure done if
 - Baby shows signs of distress — heart rate less than 110 or more than 160 beats/min
 - Very large baby and shoulder likely to get stuck

Attention

- **Do not** do episiotomy if woman and unborn baby not distressed and no need to hurry birth
- **Do not** attempt if not skilled
- Be ready to resuscitate baby (p70) — call for help

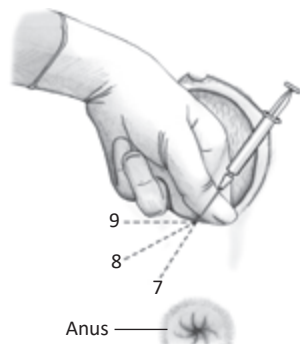
What you need

- 10mL lidocaine (lignocaine) 1%
- 10mL syringe, 21G and 23G needles
- Sterile scissors — sharp, curved, blunt-end
- Pad for perineum

What you do

Give local anaesthetic — if you have time

- Between contractions
 - Put 2 fingers between baby's head and perineum — F 2.35
 - Put in local anaesthetic
- Draw up 10mL of **lidocaine (lignocaine) 1%**. Inject 2–3mL at each of 7, 8 and 9 o'clock in 'fan' shape — F 2.35
- Draw back on syringe each time to make sure you are not injecting into blood vessel



2.35

Cutting the episiotomy

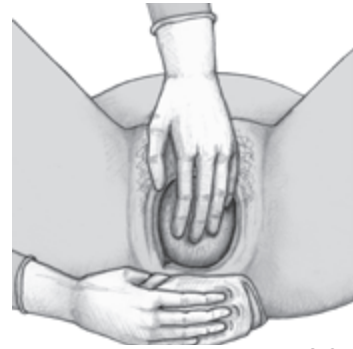
- Use sterile scissors — sharp, curved, blunt-ended
- Always angle curved end of scissors away from anus to avoid 3rd degree tear into anal canal — F 2.36
- Wait until baby's head is stretching perineum in middle of a contraction. Make 3–4cm long cut at 8 o'clock position or 60° from midline



2.36

Birth the baby

- Head will come more quickly now
 - Put one hand carefully on baby's head to gently control delivery — F 2.37
 - Other hand holds pad against perineum to support and protect it — F 2.37
- Ask mother **to pant** and give **little** pushes if needed, so baby born slowly
- Birth shoulders and body carefully so cut doesn't tear and get bigger
- See *Immediate care of baby* ([p164](#))
- See *Repairing tear or episiotomy* ([p176](#))



2.37

Primary postpartum haemorrhage

Vaginal blood loss of 500mL (2 cups) or more within first 24 hours after birth
OR any bleeding that causes signs of shock.

- Empty contracted uterus does not bleed heavily
- Heavy bleeding can have more than one cause

Urgent problems

- Woman can die from blood loss
- Heavy bleeding after birth is an **emergency**
- Continuous slow bleeding can add up to a large amount over time
- Blood loss often underestimated — woman can lose 1200–1500mL of blood before showing signs of shock
- Women with anaemia ([p132](#)) at more risk

Signs of shock

- Restless, confused, drowsy, unconscious
- Pale, cool, moist skin
- Fast breathing
- Pulse fast (more than 100 beats/min) or difficult to feel
- Low BP (systolic less than 100mmHg)
- Capillary refill longer than 2 seconds

Causes

Common causes can be grouped under the 4 Ts.

- **Tone** — uterus not contracted (atonic uterus) — **most common** cause. Can be due to
 - Oxytocin not given after birth
 - Full bladder stopping uterus from contracting properly
 - Delayed breastfeeding
- **Trauma** —
 - Tears of the birth canal (perineum, vagina, cervix, uterus)
 - Rupture of uterus and bleeding into tissues next to the uterus (broad ligament haematoma)
 - Uterine inversion ([p65](#))
- **Tissue** —
 - Placenta not delivered
 - Placenta delivered but some tissue or membrane still inside uterus (retained placental products)
- **Thrombin** — woman has bleeding disorder that prevents clotting

Do first

Remember — Life support — DRS ABC (*CARPA STM p10*).

- Call for help
 - Get **midwife/doctor/obstetrician** on speaker phone, if none locally
 - Work with helper/s to move through protocol as quickly as possible
- If torrential bleeding and/or signs of shock (*p58*) —
 - Start bimanual compression straight away (*p62*)
 - Have helper move through next steps with compression in place
- Make sure there is only 1 baby by feeling top of uterus (fundus). Should be no higher than umbilicus. If second baby — **medical/specialist consult**
- If placenta delivered and top of uterus (fundus) soft — rub up a contraction to help pass clots (*p168*)
 - Get helper to do this until uterus stays hard (contracted), then recheck every 5 minutes
- Give **oxytocin** IM single dose – 10 international units
- Put in IV cannula (*CPM p84*), largest possible, if not already in
 - If you can't get IV cannula in — put in IO needle (*CPM p88*)
 - Give **normal saline** 1L straight away, warmed if possible
- Put in indwelling urinary catheter (*p281*) with drainage bag and hourly measure
- Try to keep woman calm and warm
- Keep baby with mother, encourage to breastfeed to stimulate contractions

Check

- Uterus 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)
- Temp, pulse, RR, BP, O₂ sats — work out REWS (*p8*). Repeat every 15 minutes
- POC test for Hb

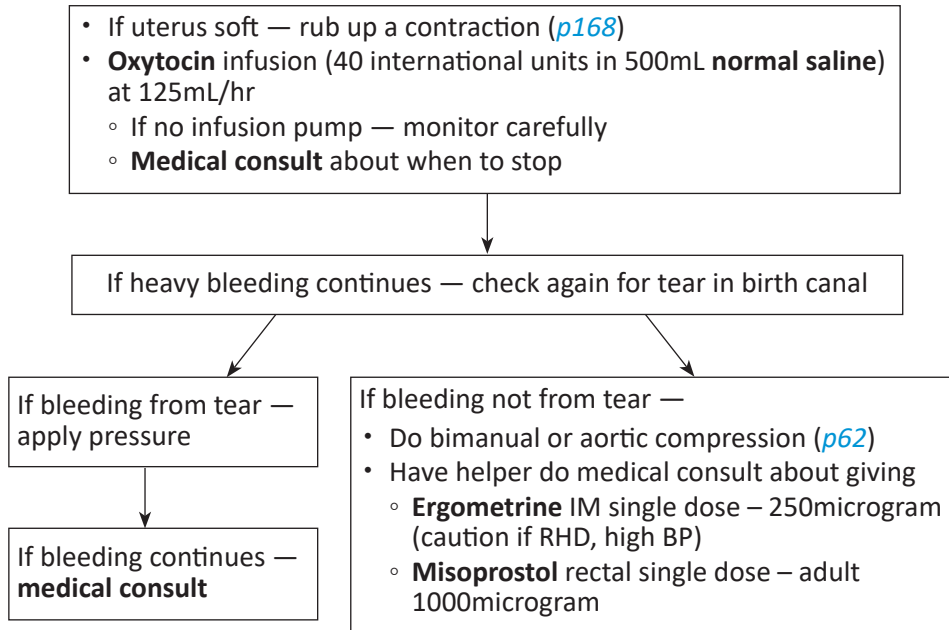
Do

- Give **oxygen** to target O₂ sats 94–98% *OR* if moderate/severe COPD 88–92%
 - Non-rebreather mask 10–15L/min
- **Medical consult** about further management, sending to hospital
- Put in second IV cannula (*CPM p84*), largest possible, if not already in
 - If you can't get IV cannula in — put in IO needle (*CPM p88*)
 - Flush with 5mL **normal saline** every 4 hours
- Examine cervix, vagina, perineum for tears. Manage what you find — see *Tears of the birth canal (p58)*

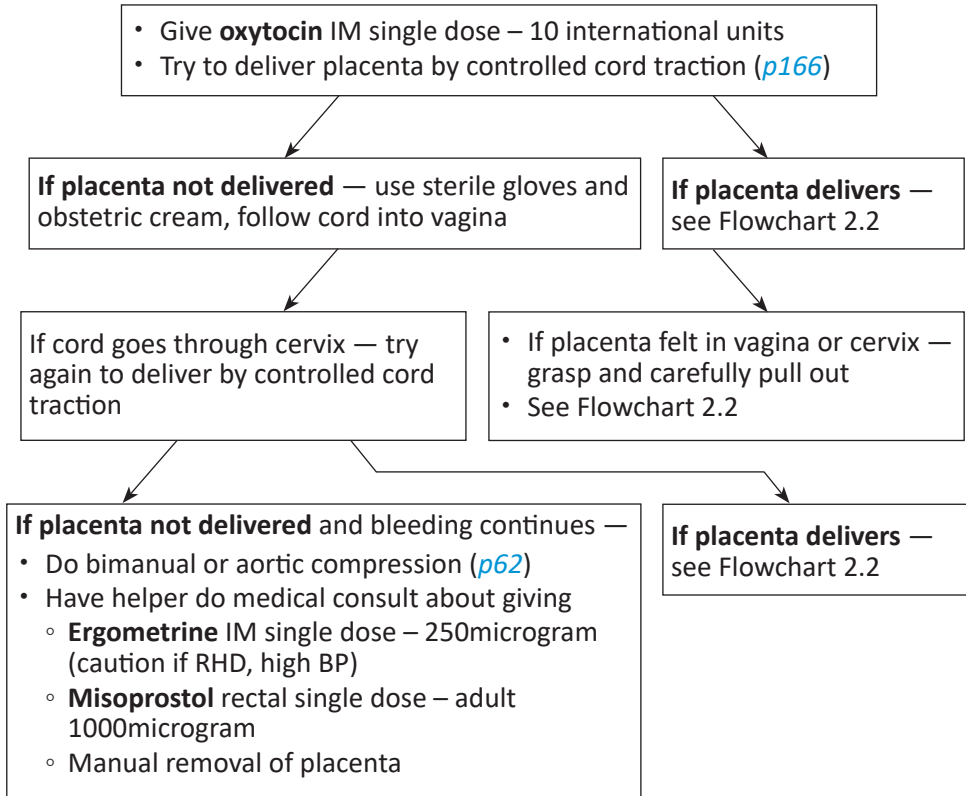
If bleeding still heavy or signs of shock —

- Give another 500mL **normal saline** straight away
 - Can repeat 500mL bolus up to total of 2–3L **normal saline**
- Start bimanual compression ([p62](#))
 - Have helper move through next steps with compression in place
- **If placenta delivered — follow Flowchart 2.2**
 - Check top of uterus (fundus) at each step
 - If bleeding settles — stop at that step, **medical/midwife consult**
 - If heavy bleeding starts again or uterus doesn't stay contracted — rub up a contraction ([p168](#)), continue to work through steps
- **If placenta not delivered — follow Flowchart 2.3**
 - If bleeding settles — stop at that step, **medical/midwife consult**

Flowchart 2.2: If placenta delivered



Flowchart 2.3: If placenta not delivered



While waiting for evacuation

- 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 500mL **normal saline**) at 125mL/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 (p171) and baby (p184)
 - Continue observations until evacuated

Bimanual and aortic compression

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

Do

- Make sure you follow steps in Primary postpartum haemorrhage (*p58*). Use bimanual or aortic compression to control ongoing bleeding
- Have helper give **oxygen** to target O₂ sats 94–98% *OR* if moderate/severe COPD 88–92%
 - Non-rebreather mask 10–15L/min

- 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.

- 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 — F 2.38
- Other hand lifts and pulls uterus forward, pushing it down over fist — F 2.38

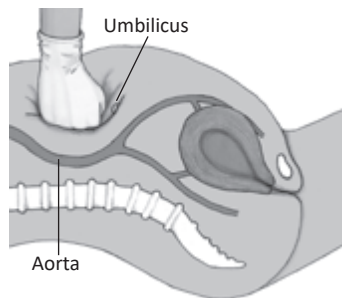


2.38

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 main (dominant) hand
- Press down on abdomen just above umbilicus and slightly to patient's left — F 2.39
 - Feel for pulsations to check you are over aorta
- When enough pressure applied to compress aorta between your fist and woman's spine, helper will feel femoral artery pulse disappear



2.39

Manual removal of placenta

Emergency procedure used if placenta won't deliver and still heavy bleeding after trying all other procedures for primary postpartum haemorrhage.

Before trying this procedure

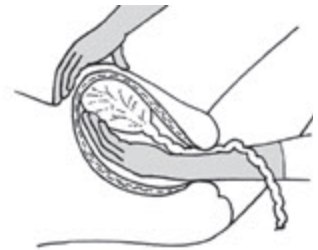
- **Medical consult**, send to hospital
- Keep doctor on speaker phone

What you need

- Helpers. Best if one to help you, one to support and reassure woman
- 2 IV cannula in place (*CPM p84*), largest possible
 - 1 for IV fluids
 - 1 for IV medicines, IV infusion
- Indwelling urinary catheter in place (*p281*), with balloon blown up to keep it in bladder
- Water-based lubricant or obstetric cream

What you do

- Explain to woman and helpers what is going to happen and why
- Give **oxygen** to target O₂ sats 94–98% *OR* if moderate/severe COPD 88–92%
 - Non-rebreather mask 10–15L/min
- If woman conscious — give **pain relief**
 - **Morphine** IV 1–2mg every 3 minutes until woman sleepy
 - Must have **naloxone** available
- Keep IV **normal saline** running
- Put on sterile gloves, cover with water-based lubricant or obstetric cream
- Put main (dominant) hand into vagina, follow cord up to cervix
- If placenta in cervix — grasp hold and carefully pull out
- If placenta not in cervix — follow cord into uterus until you find placenta
- Put other hand on abdomen, hold top of uterus to steady it — F 2.40
- With hand in uterus, find edge of placenta. Use side-to-side sweeping movement with fingers to separate placenta from wall of uterus — F 2.40
 - **If placenta doesn't separate easily — stop** straight away
 - Placenta may be abnormally attached to wall of uterus
 - **Medical consult**
- When completely free, grasp placenta — F 2.41. Pull out carefully, try to keep in one piece



2.40



2.41

- Ask helper to rub up a contraction ([p168](#))
- Start **oxytocin** infusion (40 international units in 500mL **normal saline**) at 125mL/hr
 - If no infusion pump — monitor carefully
 - **Medical consult** about how long to continue
- Check placenta and membranes complete ([p169](#)) — placenta may be in pieces and hard to tell if it is complete
 - If they appear incomplete or women keeps bleeding — consider doing procedure again to check if part of placenta or membranes still inside. Stop oxytocin infusion first

If placenta not removed and still heavy bleeding —

- Do bimanual or aortic compression until help arrives ([p62](#))
- **Medical consult** about giving **ergometrine** IM – 250microgram

After placenta removed and waiting for evacuation

If heavy bleeding doesn't stop or starts again —

- Do bimanual or aortic compression ([p62](#))
 - **Medical consult** about giving **ergometrine** IM – 250microgram
-
- If bleeding slows or stops
 - Check vaginal blood loss and make sure uterus is contracted — every 5 minutes for 15 minutes, then every 15 minutes
 - Temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#)). Repeat every 15 minutes
 - **Medical consult** about
 - More IV fluids
 - IV antibiotics — usually **cefazolin** IV single dose – adult 2g *AND* **metronidazole** IV single dose – adult 500mg
 - **Do not** let woman eat or drink anything — may need operation
 - Send placenta with woman
 - Double bag then put in pathology transport container with ice brick
 - Make sure it is labelled

Uterine inversion

Uterus turns inside out after birth — appears as red raw mass in vagina or coming out of birth canal.

- Placenta may still be attached — **do not** pull off
- Uterus must immediately be pushed back up vagina into correct position

Urgent problems

- Woman may be shocked
- May be severe, constant abdominal pain
- May be severe bleeding

Diagnosis

- Consider in woman with sudden collapse or shock after birth
- Check for top of uterus (fundus) 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

Remember — Life support — DRS ABC (*CARPA STM p10*)

Check

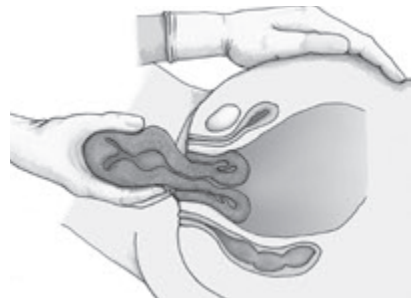
- POC test for Hb

Do not

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

Do

- Call for help
 - Have helper do **medical consult**, send to hospital straight away
- Resuscitate mother
 - Give **oxygen** to target O₂ sats 94–98% *OR* if moderate/severe COPD 88–92%
 - Nasal cannula 2–4L/min *OR* mask 5–10L/min
 - Put in IV cannula (*CPM p84*), largest possible, if not already in
 - Give IV fluids as directed by doctor
- Try manual replacement of uterus (*below*)



Manual replacement

- Put on sterile gloves, cover with obstetric cream or water-based lubricant
- Gently grasp fundus of uterus in one hand, palm up — F 2.42

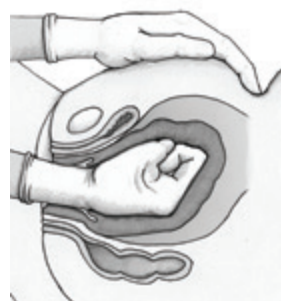
2.42



- Put hand inside vagina and push fundus up the vagina toward the umbilicus — F 2.43. This may take a few minutes of constant firm pressure
- If uterus returns to normal position — leave hand inside until you feel a firm contraction — F 2.44
 - Give **oxytocin** IM or slow IV push single dose – 10 international units straight away
 - *THEN* start **oxytocin** infusion (40 international units in 500mL **normal saline**) at 125mL/hr
 - If no infusion pump — monitor carefully
 - **Medical consult** about how long to continue
- If uterus doesn't go back manually — do hydrostatic replacement (*below*)



2.43



2.44

Hydrostatic replacement

- Attach 1L bag of warmed **normal saline** to giving set
 - Put bag as high as possible above woman
- Tilt woman head down
- Holding end of tubing, put hand into vagina behind uterus
- Try to seal vaginal entrance around arm and tube using labia and your other hand
 - *OR* if available, use silastic ventouse cup in vagina for better seal — F 2.45
- Run **normal saline** in by gravity — several litres may be needed
- If uterus returns to normal position — leave hand inside until you feel a firm contraction
 - Give **oxytocin** IM or slow IV push single dose – 10 international units straight away
 - *THEN* start **oxytocin** infusion (40 international units in 500mL **normal saline**) at 125mL/hr
 - If no infusion pump — monitor carefully
 - **Medical consult** about how long to continue
- If uterus can't be replaced — continue resuscitation while waiting to send to hospital

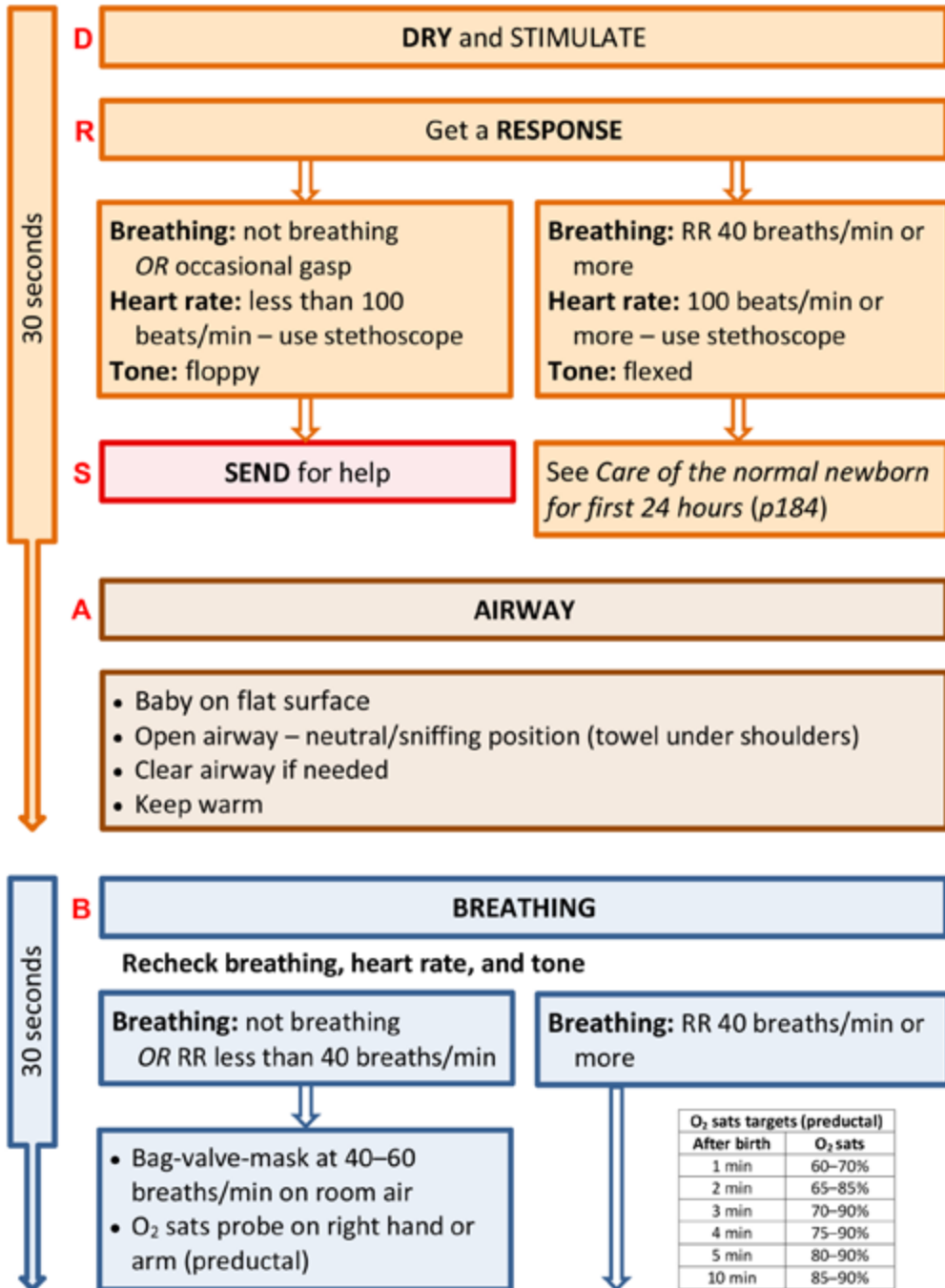


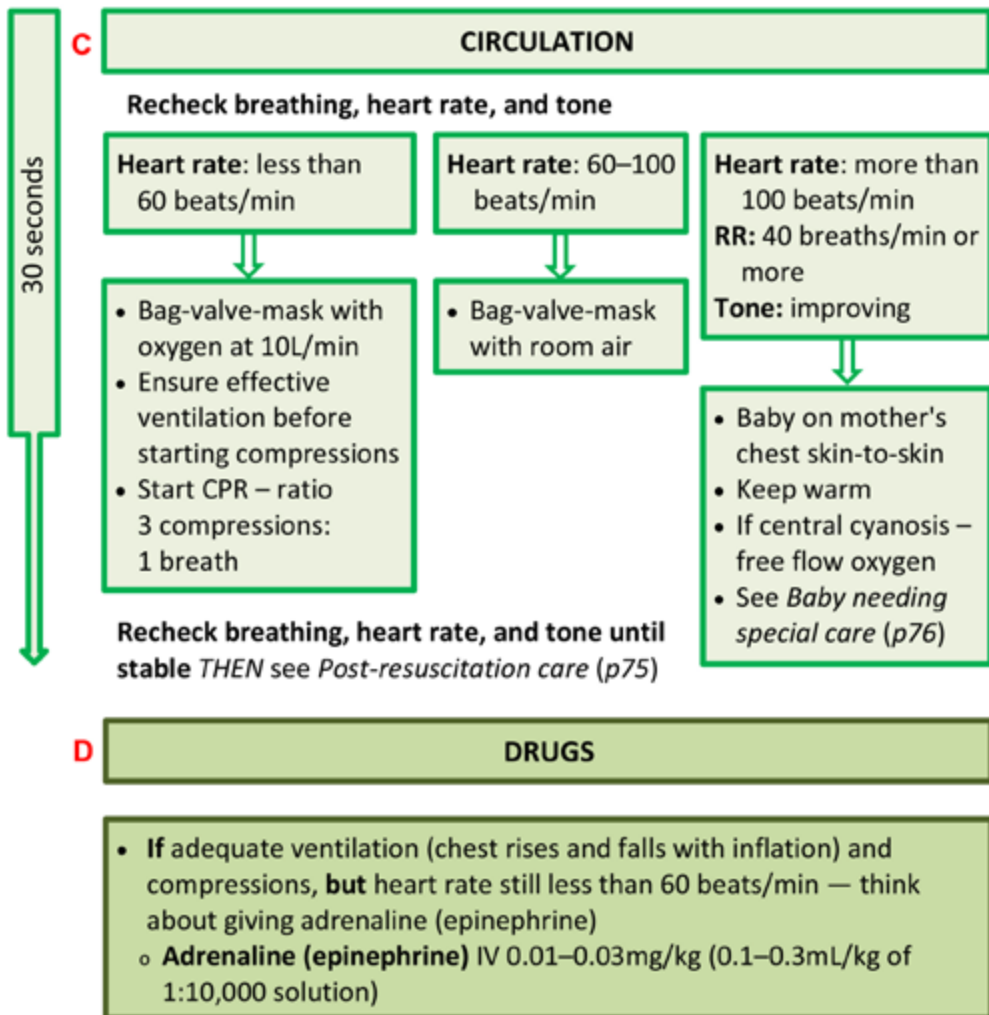
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Further management

- Once replaced — keep uterus contracted
 - Massage uterus
 - **Oxytocin** infusion (40 international units in 500mL **normal saline**) at 125mL/hr
 - If no infusion pump — monitor carefully
 - **Medical consult** about how long to continue
- Bimanual compression ([p62](#))
- Put in indwelling urinary catheter ([p281](#))
- Explain to woman what has happened and reassure her
- **Medical consult** about
 - Pain relief
 - Antibiotics
 - **Cefazolin** IV single dose – adult 2g
 - **AND metronidazole** IV single dose – adult 500mg
- Continue observations until evacuated to hospital

Newborn resuscitation flowchart





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
- Put O₂ sats probe on baby's right hand or arm (preductal) during resuscitation if available

Only intubate if trained and competent in advanced neonatal resuscitation.

- Keep baby warm and dry but **do not** overheat ([p182](#)), can depress respiration
- APGAR score ([p180](#)) at 1 and 5 minutes helps assess wellbeing of newborns
 - **Do not** stop resuscitation to do APGAR score
 - Calculate score at end of resuscitation, record

What you need

- Clean, warm environment
- Complete set of newborn resuscitation equipment ([p157](#))
 - Must be checked routinely and after use

Steps of resuscitation

- **D – Dry** and stimulate (to get a response)
- **R – Response** from baby
 - Do rapid assessment of breathing effort, heart rate, tone
- **S – Send** for help
- **A – Airway** — open and clear, position (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 indicated by
 - Spontaneous breathing
 - Increasing heart rate
 - Improving tone

Do — before birth

- Call for help — other nurses, ATSIHPs, doctor if in community
- Warm room. Close doors and windows to stop drafts, or open doors and windows if air conditioner can't be turned off
- Get equipment ready ([p157](#)), 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**

- **Dry and 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.

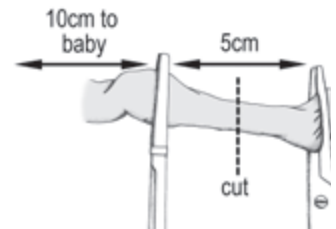
- Have helper do **urgent medical consult**. If doctor not on site — should stay on phone
- Follow the steps below or see *Newborn resuscitation flowchart (p68)*
 - Assess breathing effort, heart rate and tone every 30 seconds
 - Use results to guide progress through following steps or flowchart

Assessment and resuscitation techniques at each step described below.

- If answer **YES to ALL signs in rapid assessment** — see *Care of normal newborn for first 24 hours (p184)*

Clamp and cut cord if needed

- Put 2 metal clamps on cord 5cm apart, at least 10cm from baby's abdomen — F 2.46
- Cut cord **between** 2 clamps with sterile blunt-end scissors
- **Do not** take clamps off after cutting



2.46

A – Airway

Establish an **airway**

- Put baby on flat, dry surface
- Put baby's head in sniffing/neutral position to open airway — F 2.47
 - Small towel under shoulders helps maintain position
 - **Do not** tip head forward — F 2.48, or too far back — F 2.49



2.47



2.48



2.49

- Clear airway as needed
- If baby not vigorous and crying *AND* meconium-stained liquor (brown or green fluid) or large amount of secretions blocking airway — use **suction**
 - Gently suction mouth then nose with 10–12F catheter for 5 seconds
 - **Do not** put suction catheter down more than 5cm
 - If skilled, use laryngoscope and suction meconium from trachea and larynx under direct vision
 - **Take care.** Don't cause laryngeal spasm and trauma
- Reposition baby's head to open airway

- Recheck **breathing effort, heart rate, tone**
- Continue to follow steps below or see *Newborn resuscitation flowchart (p68)*

B – Breathing

- If baby 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 — F 2.47
 - Mask should cover nose and mouth — F 2.50
 - Need good seal between mask and face — F 2.51
 - Check for chest wall movement with each inflation — best indicator that mask is sealed and lungs being inflated
 - Put O₂ sats probe on baby's right hand or arm (preductal)
- If chest not rising with each squeeze of bag — check for
 - Poor seal
 - Reapply mask to face to form better seal
 - Blocked airway
 - Reposition head
 - If secretions — suction mouth and nose. **Do not** put suction catheter down more than 5cm
 - Not enough inflation pressure being used
 - Squeeze bag more firmly to get an easy rise and fall of chest



2.50

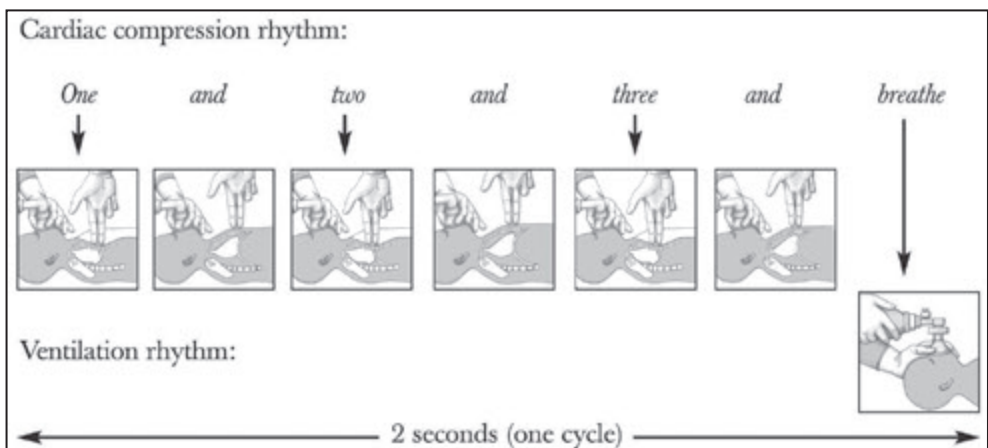
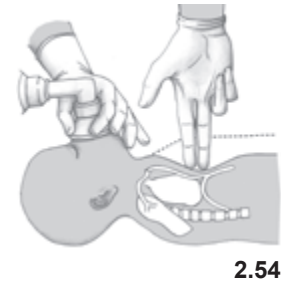
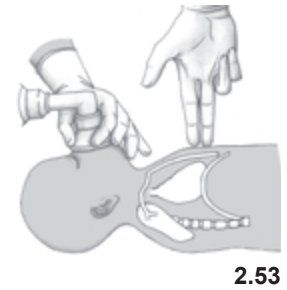
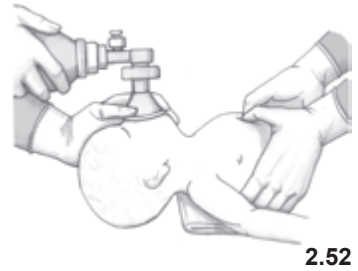


2.51

- After every 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
- Ventilation most effective action in newborn resuscitation — make sure assisted ventilation effective before continuing to follow steps below or see *Newborn resuscitation flowchart (p68)*

C – Circulation

- 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 needing special care* (p76)
 - If heart rate **60–100 beats/min** — continue bag-valve-mask ventilation
 - If heart rate **less than 60 beats/min** after 30 seconds of effective ventilation — continue bag-valve-mask ventilation with **oxygen** at 10L/min, start **chest compressions**
 - For chest compression use
 - 2 thumbs on lower third of sternum with fingers around chest — F 2.52
 - Thumbs side-by-side, or overlap for small baby
 - Best for 2-person resuscitation
 - *OR* 2 fingers along sternum at right angle to chest — F 2.53
 - Best for single person resuscitation
 - Can hold mask on with other hand, tuck bag under same arm
 - Depth — 2–3cm ($\frac{1}{3}$ depth of chest) — F 2.54
 - 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 ... — F 2.55



- After 30 seconds — check **breathing effort, heart rate, tone**. Continue to follow steps below or see *Newborn resuscitation flowchart* (p68)
- Continue to check **breathing effort, heart rate, tone** every 30 seconds

If baby not improving

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

- Continue bag-valve-mask ventilation and chest compressions
- **Review resuscitation technique**
 - Is chest movement adequate. Recheck airway (p71), seal (p72), inflation pressure (p72)
 - Check **oxygen** connected to bag-valve-mask at 10L/min
 - Are chest compressions $\frac{1}{3}$ 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
 - If skilled, be ready to put in IV cannula (CPM p84), IO needle (CPM p88), or umbilical vein catheter as directed by doctor
 - **Adrenaline (epinephrine)** IV/IO 0.01–0.03mg/kg (0.1–0.3mL/kg of 1:10,000 solution)

Ongoing resuscitation

- If prolonged bag-valve-mask ventilation needed — get helper to put in **orogastric** 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, restart ventilation
- If no heart beat after 15 minutes of resuscitation — outcome for baby always poor. **Medical consult** about stopping resuscitation
- Talk with mother and family, explain situation

Pulse oximetry

- Use O₂ 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 arm (preductal)

- See Table 2.10 for target O₂ sats
 - O₂ sats for normal newborns can take up to 10 minutes to rise above 90%
- If O₂ sats reach 90% — gradually reduce amount of oxygen being given
- If O₂ sats falling or less than 90% after 10 minutes — **specialist consult**

Table 2.10: 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 needing special care* (p76) for monitoring and ongoing care
- Baby may need fluid or medicines. Be ready to put in IV cannula (*CPM p84*), IO needle (*CPM p88*), umbilical vein catheter as directed by doctor
- Continue **oxygen** unless directed by doctor to stop
- Put in nasogastric tube if skilled and directed by doctor. Size 5F for very small babies, size 6F for bigger babies
 - Leave tube on free drainage (unplugged) to let out air in stomach (from bag-valve-mask ventilation)

Newborn needing special care

Babies who are sick at birth, or at risk of becoming unwell after birth, need close observation and most need to be sent to hospital.

Babies needing special care often have identified risk factors.

Risk factors		
Mother's history	Labour and birth	Newborn period
<ul style="list-style-type: none"> • Little or no antenatal care — less than 4 visits • Diabetes • Alcohol and/or other substance use • GBS positive • Current STI • High BP 	<ul style="list-style-type: none"> • Mother needing help with birth • Baby needing any resuscitation at birth • Maternal fever in labour • Meconium-stained liquor (green or brown amniotic fluid) 	<ul style="list-style-type: none"> • 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
 - Baby gets cold easily (hypothermia)
 - Difficulty or increased work of breathing (respiratory distress)
 - Low blood glucose (hypoglycaemia)

Medical consult about sending to hospital, at all stages in management and straight away if baby's condition gets worse.

Immediate care after birth

Check

- Temp under arm (axillary) every 15 minutes — never rectally
- Monitor heart rate and O₂ sats continuously
 - Use pulse oximeter with infant probe. Put on right hand or wrist (preductal). 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 (mouth, lips, mucous membranes)
- Record heart rate, RR, O₂ sats every 5 minutes for 30 minutes, then every 15 minutes
- BGL using heel-prick blood (*CPM p381*)
 - If BGL less than 2.6mmol/L — treat straight away (*p78*)
- Is umbilicus bleeding, is clamp on properly
- **Check respiratory pattern every time** you do observations
 - Look for signs of respiratory distress
 - Grunting, chest in-drawing
 - Working hard to breathe (using accessory muscles, nasal flaring)

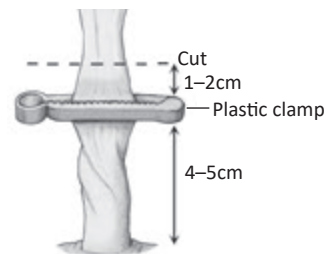
- RR less than 35 or more than 60 breaths/min
- Apnoea (stops breathing for more than 15 seconds)
- If any of these signs *OR* looks centrally cyanosed (mouth, lips, mucous membranes pale or blue) — treat straight away (p78)

Normal observations for newborn baby

- Temp — 36.5–37.5°C under arm
- Heart rate — 110–160 beats/min
- RR — 30–60 breaths/min
 - No distress — no grunting, nasal flaring, chest in-drawing (sucking in of soft tissues around rib cage or neck)
- O₂ sats — can take 10 minutes to reach 90% or more in room air in after-birth period, then reaches 95% or more as normal rate
- Colour — tongue and lips pink. Not pale or blue
- Movement — active when awake, moving all limbs with good tone. Not floppy or stiff
- BGL — more than 2.6mmol/L
- Feeding — gets started with breastfeeding. Not vomiting

Do

- Keep baby warm (p182)
 - If well enough — direct skin-to-skin contact with mother
 - *OR* dress and wrap in warm towel and space blanket, be careful to keep head covered
- Check and record heart rate, RR, tone, colour and response to stimulation at 1 minute and 5 minutes
 - Work out APGAR score (p180) when there is time
- Trim cord
 - Clamp remaining cord with plastic cord clamp 4–5cm from abdomen. Make sure it is snapped shut
 - Remove metal cord clamp put on after birth
 - Trim cord 1–2cm above plastic clamp — F 2.56, or at length requested by mother or support person
- 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



2.56



Do — if breathing problems (respiratory distress)

- Give **oxygen** until target O₂ sats are met — see Table 2.11
 - Nasal cannula 1–2L/min
- Continue to monitor baby closely with continuous pulse oximeter
- Record heart rate, RR, O₂ sats every 15 minutes
- If breathing irregular with long pauses (apnoea)
 - **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 ([p68](#))
- If O₂ sats reach target — gradually reduce amount of oxygen
- If O₂ sats fall below target — **specialist consult**

Table 2.11: 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

Do — if low blood glucose (hypoglycaemia)

When BGL less than 2.6 mmol/L

- If at risk but well — **safe** to breastfeed. See *Feeding guidelines* ([p79](#))
 - 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** again
 - Consider giving expressed breast milk, infant formula
 - Consider **glucose gel** – 0.5mL/kg (15g glucose in 37.5g oral gel)
- If unwell — **not safe** to breastfeed. See *Feeding guidelines* ([p79](#))
 - **Medical consult.** Doctor should talk to paediatrician. If doctor not available within 30 minutes — clinic staff to contact paediatrician
 - **Do not** breast or bottle-feed due to risk of aspiration
 - 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

Feeding guidelines

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

Ongoing care

- If no risk factors ([p76](#)) and normal observations at 15 minutes — see *Care of normal newborn for first 24 hours* ([p184](#))

For all other babies, while waiting to send to hospital

- Check baby has name bands on wrist and ankle
- Check temp every hour
- Weigh baby if stable
- Check BGL
 - If baby jittery (jumpy), unsettled, sleepy
 - Every hour if
 - Small — less than 2.5kg
 - Large — more than 4.5kg
 - Baby of mother with diabetes
 - Sick
 - If BGL less than 2.6mmol/L at any time — treat ([p78](#)) straight away
- If baby stable — check heart rate, RR, O₂ sats every 15 minutes for 1 hour, then every 30–60 minutes
- If baby sick — check heart rate, RR, O₂ sats every 15 minutes
- Record if baby passes urine or meconium
- If mother has history of substance misuse — watch for symptoms of withdrawal in baby
- **Medical consult** about
 - Antibiotics — if possible, collect blood for cultures first
 - **Hepatitis B immunisation**
- Fill in birth registration forms ([p187](#))

3 Pregnancy

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Introduction

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, poor family or social support
- Environmental and social issues — crowded housing, mobile lifestyle, poor nutrition, access to affordable nutritious food, domestic/family violence
- 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, 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.

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 service. Other health staff may hear a woman is pregnant from an ATSIHP, ACW, or 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.

Pre-pregnancy counselling

Health check for women planning pregnancy.

- Aims to
 - Find and treat problems that might put woman or baby at risk
 - Make sure woman's medical problems well managed
 - Give education on health, nutrition, fertility
 - Investigate any problems — trouble getting pregnant (fertility problems), recurrent miscarriages
- Best done **at least** 3 months before woman tries to become pregnant
- Offer before stopping contraception or removing LARC (eg ENG-implant)
- Can offer opportunistically to any woman of childbearing age
- Important to be discreet and private — woman may not want others from community knowing she is trying to get pregnant

Check

- History, examination, tests as for first antenatal visit ([p89](#))
- Adult Health Check ([CPM p123](#)) — include STI check ([p238](#)), cervical screening if due ([p272](#))
- Urine pregnancy test ([p279](#))
- Immunisation status, see *Australian Immunisation Handbook*
- Was follow-up of problems ([p209](#)) from last pregnancy completed
 - If woman had GDM and 75g OGTT not done after last pregnancy — do now

Do

Medical consult if

- High risk of baby with abnormality — previous baby with congenital abnormality, family history of inherited disorder
 - May need genetic counselling
- Obstetric issues that could affect future pregnancy or birth — 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, substance use issues
- Optimising control of chronic conditions — high BP, diabetes, asthma, epilepsy, depression
- Encourage healthy weight (BMI 20–25) before getting pregnant
- **Immunisations**
 - If rubella serology non-immune or unclear — offer MMR
 - Advise not to get pregnant for 28 days after MMR

- If not immune to varicella — **medical consult** about immunisation
 - If woman already pregnant — avoid giving
- If influenza immunisation due — offer
 - Pregnant women are at high risk of complications from flu
- Offer any other immunisations due
- **Menstrual cycle** and best times to try for baby (have sex)
 - Ovulation usually 2 weeks before 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
- Arrange to see woman again and talk about test results, any other worries she is having in relation to trying to get pregnant

Education

- See *Antenatal education* ([p109](#))

Antenatal checklist

Routine antenatal check

— every visit

Ask

- How she is feeling
 - Physical problems — urine symptoms, STI symptoms, vaginal loss, bleeding, pain, DVT or PE symptoms ([p138](#))
 - Social or emotional issues
- Baby's movements — 18–20 weeks first baby, 15–16+ weeks next babies

Check

- How many weeks pregnant (gestation)
- Weight
- BP
- U/A — mid-stream urine
- Oedema — face, fingers, feet, ankles
- After 12 weeks
 - Fundal height ([p98](#))
 - Baby's heart rate ([p101](#))
- After 36 weeks — baby's position ([p99](#))
- EPDS ([p224](#)) at least twice in pregnancy

Do

- Talk with woman about
 - Baby's growth and development
 - Any problems found
 - Plans for baby's birth
 - Ongoing care needed
 - Smoking, alcohol, substance use — brief interventions ([CPM p138](#))
 - Antenatal education topics ([p109](#))
- See Table 3.2 ([p94](#)) for managing results

First visit — ALSO

Ask or check file notes

- Estimated date of birth ([p89](#))
- Detailed history ([p89](#))

Check

- Head-to-toe check ([p90](#))
- Risk factors for pre-eclampsia ([p128](#))
- Offer full STI check ([p238](#))
- Take blood for
 - FBC, iron studies, POC test for Hb
 - Blood group, antibody screen
 - Test/s for diabetes ([p119](#)) — OGTT (preferred) OR HbA1c and venous blood glucose
 - Rubella serology
 - Hepatitis B serology, hepatitis C serology
 - HIV serology
 - Syphilis serology
 - If known diabetes, high BP or kidney disease — UEC, LFT
- Other tests
 - Mid-stream urine — U/A, send for MC&S
 - Cervical screening if due ([p272](#)). Best done before 24 weeks pregnant
 - If speculum exam not done — cervical screen by self-collected HPV test if eligible ([p264](#)) AND visual check of vulva and vagina
 - If known chronic high BP or kidney disease — urine ACR
 - If history of preterm birth — MC&S for BV

Things to offer at specific times

11–13⁶ weeks

- If woman unsure of last period — dating scan
- First trimester screen for abnormalities ([p103](#))

14–20 weeks

- If first trimester screen not done — offer second trimester screen ([p103](#))

18–22 weeks

- Morphology ultrasound ([p105](#)) + cervical length measure
 - If risk of preterm birth ([p107](#)) — request transvaginal ultrasound for cervical length — ‘Preterm birth risk’
- Antenatal review at regional service

26–28 weeks

- If no known diabetes — 75g fasting OGTT. See *Screening for diabetes in pregnancy* ([p119](#))
- If HBsAg positive (hepatitis B) — check viral load (HBV DNA)

28 weeks

- POC test for Hb, take blood for FBC, iron studies
- 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 ([p241](#))

34 weeks

- If RhD negative with no Anti-D antibodies — give second prophylactic RhD-Ig IM – 625 international units

36 weeks

- POC test for Hb, take blood for FBC
- Combined vaginal and anal swab ([p266](#)) for GBS ([p147](#))
- Pregnancy STI check ([p241](#))

38 weeks

- Transfer to regional centre to wait for birth

40⁺ weeks if still in community

- Medical/midwife consult

Antenatal education

Try to talk about each of these topics during pregnancy.

See *Antenatal education and birth planning* ([p109](#))

- Access to healthy food, nutrition and healthy diet, supplements
- Exercise
- Working
- Sex
- Common discomforts of pregnancy
- Mental health
- Domestic/family violence
- Prescribed and over the counter medicines
- Smoking, alcohol, other substances
- Warning signs
- Birth plan, travel to a regional centre for birth
- Signs of labour, process of birth
- After the birth — breastfeeding, family supports, looking after baby
- Contraception

Antenatal care

Maintain or improve health of pregnant woman, monitor progress of pregnancy, detect and manage problems, provide information and education.

Antenatal care schedule

- Planned schedule of visits should consider individual woman's needs
- If high risk pregnancy (Table 3.1), or other problems — may need more visits
- Minimum of 7–10 visits recommended
 - Monthly until 28 weeks
 - *THEN* every 2 weeks until 36 weeks
 - *THEN* weekly until leaves for regional centre, or birth
- Key visits
 - First visit in first 10 weeks of pregnancy
 - 18–20 weeks — timed with morphology ultrasound if possible
 - 26–28 weeks — timed for blood tests
 - 30–32 weeks
 - 34 weeks
 - 36 weeks — time to collect pathology and organise travel to regional centre for birth
 - 38 weeks — depends on when woman transfers to regional centre
 - Weekly to 40 weeks — medical/midwife review

Providing antenatal care

Pregnancies must not be managed in isolation. Shared care is essential.

- Within 1 week of woman's first antenatal visit
 - **Doctor/midwife/obstetrician consult** about risks and developing shared care plan
 - Consult as per plan, or at least once a trimester to monitor and update plan
 - Women at high risk need more frequent review
 - Share woman's antenatal care with female ATSIHP if appropriate
 - If woman travelling — talk with staff in other clinics about shared antenatal care
- Record antenatal care, progress, results, education in antenatal file notes *AND* in woman's hand-held pregnancy record if she has one
 - Encourage women to participate in MeHR/PCEHR
- Encourage woman to be involved in her pregnancy care
- If difficult to see woman as often as recommended — use any opportunity to provide antenatal care

Give information and education about pregnancy ([p109](#)) from first antenatal visit.

Antenatal checks

Routine antenatal check

- See *Antenatal checklist* (p86)

First antenatal visit

- Every woman should be seen by doctor and/or midwife early in pregnancy
- Spend time getting to know woman, explaining what needs to be done
 - Talk about tests available, why recommended, see *Antenatal screening tests for baby* (p103)
 - Be patient, give her time to think about everything
- Long visit. May need to ask her to come back the next day to finish
- Do routine antenatal check (p86) AND the following

Ask about and check file notes

This pregnancy

- Try to work out **estimated date of birth** (EDB)
 - Use date of last normal menstrual period (LNMP) and obstetric wheel
 - If unsure of calendar date — was it at the same time as recent community or other event
 - If LNMP unknown or unsure — **refer for dating ultrasound**
 - Best done before 14 weeks
 - Consider combining with first trimester nuchal translucency measurement (p103)
- Clinical assessment to check for current problems (eg cough, pain on passing urine, STI)
 - If increased shortness of breath or needs to sleep with 2 pillows — consider RHD

Detailed history

Best way to find women who will need extra care during pregnancy (Table 3.1), labour, after birth. Consider need for interpreter, using information in woman's own language if available.

Obstetric history

History of each pregnancy including stillbirths, miscarriages, ectopic pregnancies, terminations. Record relevant history.

- Pregnancy — high BP, diabetes, anaemia, infections, GBS, bleeding, blood clots (DVT, thromboembolism), premature rupture of membranes
- Birth — date, place, gestation, type, length of labour, fetal distress, episiotomy, tear including degree, retained placenta, heavy bleeding
 - Birth type — spontaneous vaginal birth, induction, forceps, vacuum, Caesarean section
- Baby — weight, APGAR scores, birth abnormalities, problems in first 6 weeks, Group B Streptococcus infection, breastfeeding

- After birth — infection, breast problems, blood clots (DVT, PE), depression
- If history of preterm birth — see *Preventing preterm birth* (p107)

Medical and surgical history

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

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, PID, operations

Family history

- Medical problems in close relatives, especially diabetes, hypertension, mental health problems
- Multiple pregnancy, preterm labour or birth (p107)
- Genetic/family problems

Social history

- Regular partner, family support, housing, money
- Domestic/family violence (p324)
 - May increase or be triggered by pregnancy
 - Explain that asking about it is routine part of antenatal care
 - Use screening tool if available
 - Be aware of mandatory reporting requirements for your state/territory
- Substance use — pregnancy is an ideal time to talk with women about substance use, many women motivated to change at this time
 - Alcohol and other substances
 - Smoking, second hand smoke

Check

- Do head-to-toe check
 - Weight, height, BMI (CPM p108)
 - BP — take when seated and rested. Use manual sphygmomanometer, correct size cuff, same arm each time
 - Teeth — check for gum disease, tooth decay
 - Thyroid — feel for obvious enlargement
 - Chest and heart — note heart rate, check for wheeze or crackles
 - Check for heart murmurs. Done by doctor if possible
 - If suspect heart murmur or RHD (p136) — refer for echocardiogram
 - Breasts and nipples — abnormalities, concerns

- Abdomen — look for scars, masses, tenderness, size of uterus
 - If uterus felt — measure fundal height ([p98](#)), baby's heart rate ([p101](#))
 - If abdomen tender — **medical/midwife consult**
- Legs — for calf tenderness, note any varicose veins
- Skin — sores or infections needing treatment
- If more than 36 weeks pregnant — palpate position of baby and try to identify presenting part ([p99](#))
- Edinburgh Postnatal Depression Scale (EPDS) ([p224](#))
 - Do again at least once more during pregnancy, usually in third trimester
 - *OR* as needed
- **Pathology tests**
 - See *Antenatal checklist* ([p86](#))
 - 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

Table 3.1: Conditions that suggest woman may need extra antenatal care

Medical problems	Current or previous obstetric problems
<ul style="list-style-type: none"> • Heart disease • History of rheumatic fever • RHD • Asthma • Kidney disease • High BP • Epilepsy • Diabetes, thyroid, or other endocrine disease • Clots in legs (DVT) • Mental health problems including perinatal depression, anxiety 	<ul style="list-style-type: none"> • Caesarean section • Recurrent miscarriages • Preterm labour or birth • 5 or more previous births • Pre-eclampsia • RhD antibodies (Anti-D) or other significant blood group antibodies • Uterine surgery, cone biopsy, fibroids removed • Bleeding during previous pregnancy • Excessive bleeding after birth of previous baby (postpartum haemorrhage) • Underweight — BMI less than 18.5 • Obese — BMI more than 30 • Birth of small baby (less than 2.5kg) or large baby (more than 4.5kg) • Stillborn baby or baby died soon after birth • Baby born with abnormalities (p103)

Do

- **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



- Any conditions needing extra care (Table 3.1)
 - May increase pregnancy risk
 - May change plan for antenatal care
 - May need additional investigations or specialist referrals
- If known conditions — see individual protocols
 - *Rheumatic heart disease in pregnancy* (p136)
 - *Diabetes in pregnancy* (p118)
 - *Kidney disease in pregnancy* (p143)
 - *High BP (hypertension) in pregnancy* (p127)
 - *Epilepsy in pregnancy* (p140)
- See Table 3.2 for management of investigation results
- Give **iodine** oral once a day through pregnancy – 150microgram. Can be in multivitamin designed for pregnancy and breastfeeding
 - If woman has thyroid condition — **medical consult**
- If early in pregnancy — give **follic acid** oral once a day until 12 weeks pregnant – 0.5mg *OR* at least 0.4mg in multivitamin designed for pregnancy and breastfeeding
 - *OR* if woman has diabetes, epilepsy, BMI over 30, or had baby with neural tube defect — **follic acid** oral once a day until 12 weeks pregnant – 5mg
- Give **iron** if needed — see *Anaemia (weak blood) in pregnancy* (p132)
- Offer **influenza immunisations** to all pregnant women — they are at high risk of complications from flu

Talk with woman about

- How pregnant they are (estimated gestation), approximate date of birth
- Common discomforts (p115) — morning sickness, heartburn
- Plan for managing ongoing problems
- Antenatal screening tests for baby (p103)
- Plan for future visits, including review in 2 weeks for results

Follow-up

- Check results — see Table 3.2 to help with ongoing care
- Medical review
- May need referral to obstetrician or other specialist if
 - Chronic medical problems
 - Twin/multiple pregnancy (p96)
 - Complicated obstetric history
- Refer to services or identify community support for social issues, if needed

Following antenatal visits

- Do routine antenatal check at each visit (p86)
 - Include relevant antenatal education (p109)
- Ask **all** pregnant women about substance use at **every** clinic visit in sensitive, non-judgemental way. Check file notes for earlier discussions

- Ask about
 - Prescribed medicines, alcohol, smoking and chewing tobacco, other drugs, herbal/natural medicines
 - Pattern of use — duration, frequency, amount, whether partner or other family members use
 - Previous use, quitting, relapses
- Assess whether dependency an issue
- Offer special tests at times indicated in antenatal checklist ([p86](#))
- Offer **whooping cough (pertussis) booster** after 28 weeks for woman, partner, other adults in house
- See Table 3.2 ([p94](#)) to help manage abnormal results
- **Midwife/doctor consult** about findings

At 36 weeks

- Check pregnancy record, make sure it is complete
- Talk again about plan for birth ([p112](#))
 - If high levels of substance use — always plan for hospital birth
- Arrange for transfer to regional centre at 38 weeks to wait for birth. Advise all women to give birth in hospital or birth centre

Things to watch for in later pregnancy

Medical/midwife consult if any concerns or you find any abnormalities.

- **Pre-eclampsia**
 - If high BP after 20 weeks — could be pre-eclampsia ([p21](#))
 - BP 140mmHg or more systolic and/or 90mmHg or more diastolic
- **Shortness of breath**
 - If increased shortness of breath — consider RHD, asthma, pulmonary embolus, heart failure
- **Growth of baby**
 - Estimate baby's growth by measuring fundal height ([p98](#)) at each visit
- **Position of baby**
 - After 36 weeks pregnant, check position of baby ([p99](#))
 - If breech position (bottom coming first) or transverse lie (across uterus) — arrange obstetric ultrasound, antenatal review
- **Baby's movements** — feel and ask woman
 - Movements felt from around 18–20 weeks pregnant, sometimes at 15–16 weeks if woman had baby before
 - Regular movements are one sign that baby is well
 - Tell woman to come to clinic for a check if she notices decreased or no movements
 - If movements reduced —
 - Check woman's temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#))
 - Check baby's heart rate ([p101](#))



- Ask about symptoms of illness or infection
- **Medical/midwife consult**
- **Baby's heart rate (p101)** — usual to check for this, reassuring for woman

Table 3.2: Management of results at first and subsequent visits

Investigation	Result	Management
BP	<ul style="list-style-type: none"> • 140mmHg or more systolic and/or 90mmHg or more diastolic 	<ul style="list-style-type: none"> • See <ul style="list-style-type: none"> ◦ <i>High BP (hypertension) in pregnancy (p127)</i> ◦ <i>Severe pre-eclampsia (p21)</i>
Hb — FBC or POC test	<ul style="list-style-type: none"> • Hb — less than 110g/L 	<ul style="list-style-type: none"> • See <i>Anaemia (weak blood) in pregnancy (p132)</i>
FBC	<ul style="list-style-type: none"> • MCV — 80fL or less 	<ul style="list-style-type: none"> • See <i>Anaemia (weak blood) in pregnancy (p132)</i>
	<ul style="list-style-type: none"> • Low platelets 	<ul style="list-style-type: none"> • Medical consult
OGTT, BGL, HbA1c	<ul style="list-style-type: none"> • See <i>Screening for diabetes in pregnancy (p119)</i> 	
Blood group and antibody screen	<ul style="list-style-type: none"> • RhD negative, no Anti-D antibodies 	<ul style="list-style-type: none"> • Repeat antibody screen at 28 weeks <ul style="list-style-type: none"> ◦ If RhD-Ig already given for sensitising event — note on form • Give routine RhD-Ig IM prophylaxis at 28 and 34 weeks <ul style="list-style-type: none"> ◦ 625 international units
	<ul style="list-style-type: none"> • RhD negative, with Anti-D antibodies 	<ul style="list-style-type: none"> • Refer to obstetrician
	<ul style="list-style-type: none"> • Other antibodies present 	<ul style="list-style-type: none"> • Medical consult
Rubella serology	<ul style="list-style-type: none"> • Positive and protective 	<ul style="list-style-type: none"> • Normal
	<ul style="list-style-type: none"> • Non-immune or unclear 	<ul style="list-style-type: none"> • Record need for immunisation in file notes • Offer MMR immunisation after birth
Hepatitis B serology	<ul style="list-style-type: none"> • HBsAg positive 	<ul style="list-style-type: none"> • See <i>Hepatitis in pregnancy — Hepatitis B (p144)</i> • Record in antenatal file notes <ul style="list-style-type: none"> ◦ Baby needs hepatitis B immunoglobulin at birth ◦ If mother needs immunisation
Hepatitis C serology	<ul style="list-style-type: none"> • Positive • Negative but risk factors identified 	<ul style="list-style-type: none"> • See <i>Hepatitis in pregnancy — Hepatitis C (p146)</i>
Syphilis serology	<ul style="list-style-type: none"> • Positive 	<ul style="list-style-type: none"> • Could be active syphilis • Medical/sexual health consult straight away. Manage as directed

Investigation	Result	Management
HIV serology	• Positive	• See <i>HIV — Pregnancy considerations</i> (p250)
NAAT	• Positive STI result	• See <i>STI management for women</i> (p245)
Vaginal swab MC&S	• Positive STI result	• See <i>STI management for women</i> (p245)
	• Positive non-STI result	• See <i>Bacterial vaginosis</i> (p255) • See <i>Thrush (candidiasis)</i> (p254)
Combined vaginal and anal swab	• GBS positive	• See <i>Group B Streptococcus</i> (p147)
U/A	• Leucocytes, blood, protein, or nitrites	• See <i>Urine problems in pregnancy</i> (p149)
	• Glucose	• Medical consult
Urine MC&S	• Culture positive	• See <i>Urine problems in pregnancy</i> (p149)
	• GBS positive	• See <i>Group B Streptococcus</i> (p147)
Cervical screening	• Any abnormalities	• See <i>cervical screening — Follow-up</i> (p291)
Obstetric ultrasound	• Abnormalities relating to <ul style="list-style-type: none"> ◦ Amount of fluid ◦ Location of placenta ◦ Morphology of baby ◦ Estimated body weight less than 10th or more than 90th centile 	• Medical consult
	• Number of babies	
	• Cervical length less than 35mm	• Refer for transvaginal ultrasound
Transvaginal ultrasound	• Cervical length less than 25mm	• See <i>Preventing preterm birth</i> (p107)
First or second trimester screening	• Any abnormal results	• Medical consult straight away
Dental exam	• Tooth decay or gum disease	• Call oral health service for advice, or refer to dentist

Antenatal care in twin pregnancy

Multiple pregnancies often need extra professional and emotional support for woman and family.

- Physical demands of multiple pregnancy can be very tiring for woman
- Common discomforts of pregnancy may be increased ([p115](#))
 - More nausea and vomiting in first 3 months (first trimester)
 - More heartburn, backache, groin pain, varicose veins
- Greater risk of complications
 - High BP, pre-eclampsia
 - Gestational diabetes
 - Preterm birth
 - Anaemia
- Babies more likely to have
 - Poor growth
 - Preterm birth
 - Congenital abnormalities
- Birth of twins often complicated — **always** plan for hospital birth

Do

Talk with woman about

- Antenatal care schedule, referral to obstetrician
- Possible trips to regional centre for extra ultrasounds
- Problems she needs to look out for, including
 - Preterm labour ([p26](#))
 - Premature rupture of membranes ([p29](#))
 - Reduced baby movements
- Antenatal education and birth planning ([p109](#))
- Seeing midwife or doctor any time she is worried
- Any available support services for twin pregnancies

Antenatal care schedule

- Multiple pregnancies should be closely monitored at all times
 - Refer to obstetrician as soon as multiple pregnancy identified
 - **Obstetrician/medical/midwife consult** any time you are concerned
- Explain schedule to woman so she can understand and help with her care
 - Extra visits can be arranged if needed
 - See *Antenatal care* ([p88](#)) for what to do at visits
 - Obstetrician will
 - Help plan antenatal care
 - Take over care when woman goes to regional centre
 - May ask for earlier repeat OGTT to screen for GDM ([p119](#))

- Plan follow-up obstetric ultrasounds
 - Ultrasound at 16–18 weeks *THEN*
 - If 2 placentas — ultrasound every 4–5 weeks
 - If 1 placenta — ultrasound every 2 weeks. High risk of twin-to-twin transfusion syndrome (TTTS)
- Make plans for woman to birth in hospital. Talk with woman about options for birthing
- Decide when woman should go to regional centre for birth, usually around 34 weeks

Remember: With twins, fundal height will be about 4 weeks ahead of gestational age.

- 1 placenta — monochorionic diamniotic (MoDi) or monochorionic monoamniotic (MoMo) twins
- 2 placentas — dichorionic diamniotic (DiDi) twins

Checking baby's growth and development

Positioning pregnant woman

- In later pregnancy the uterus is heavy. When woman lies on her back, the weight of the uterus presses down on big abdominal blood vessels, she may feel faint
 - Usual to put wedge/pillow under right hip to tilt woman slightly to left
 - If she feels faint — roll onto left side straight away, check baby's heart rate
- Lay woman as flat as possible for these procedures, but for as short a time as possible

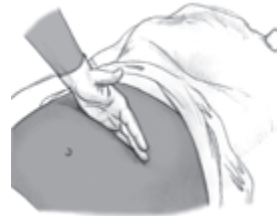
Measuring fundal height

Measurement from top of uterus (fundus) to top edge of pubic bone in pregnant woman.

- Measure at each antenatal visit after uterus out of pelvis — after 12–14 weeks pregnant
- Tells how many weeks pregnant woman is, if baby growing properly
- **Measure the same way at each visit** so measurements consistent

Do

- Ask woman to empty bladder, collect urine sample if needed ([CPM p393](#))
- 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 down where you think it is — F 3.1. Move hand up and down until it lies right 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 don't influence result
- Put end of tape measure at top of uterus, hold with 1 hand
- With other hand, stretch tape from top of uterus down midline to top of pubic bone — F 3.2
 - Often easier to ask woman to find pubic bone herself
- If fold of skin or fat at lower abdomen — stretch tape across fold straight to pubic bone. **Do not** run tape under fold of skin or fat
- Compare your measurement with expected measurement for woman's dates — F 3.3 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

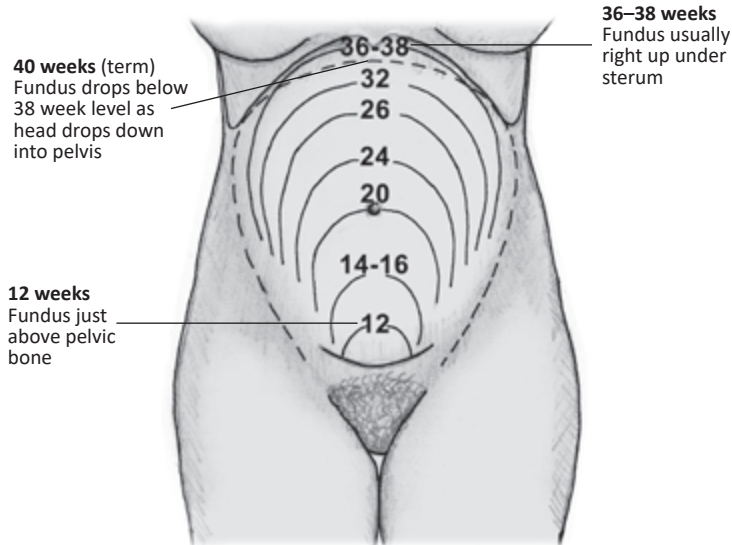


3.1



3.2

- 36–38 weeks — top of uterus at or 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 about 4 weeks ahead of pregnancy dates



3.3

You can use your fingers to estimate growth — 1 finger = 1 week's growth. From top of pubic bone (12 weeks) to umbilicus, usually room for 8 fingers (8 weeks) — $12 + 8 =$ approximately 20 weeks growth

Medical consult if

- Too much growth of baby (fundal height 3cm more than expected)
 - Too little growth of baby (fundal height 3cm less than expected)
- May need another obstetric ultrasound and review at antenatal clinic.

Palpating the baby

- Helps identify part of baby furthest down in pelvis (presenting part)
 - Head (cephalic) — most common
 - Bottom (breech) — sometimes
 - Other parts of body (eg shoulder) — rarely
- Most babies lie with their back to front of uterus (anterior lie) but some babies lie with their back to back of uterus and against woman's spine (posterior lie)
- If a lot of backs, limbs and/or movement — suspect twin pregnancy

Do

- Maintain position of woman (p98) if she is comfortable
- Look at woman's abdomen for clues about which way the baby is lying
 - If centre of abdomen looks empty — baby's back may lie against woman's spine
 - If one side of abdomen looks fuller or firmer — baby may have back to this side and limbs to other
 - Ask where the baby kicks
- Gently feel (palpate) with flat of your hands and finger pads
- Try to get a picture of the baby inside. Imagine what is underneath

Top of uterus

- Face toward woman's head, put your hands palm down on either side of top of uterus — F 3.4
- Move hands down a little, feeling as you go. Feel for
 - Head — hard and even (well defined) and can be gently 'bounced' (balloted) between your hands
 - Bottom — uneven, with soft lines (poorly defined)
 - Other parts (eg shoulder) will be almost impossible to work out
- If unsure — **midwife/doctor consult**

Sides of uterus — to feel for limbs and back

- Stay facing woman, keeping your hands on either side of uterus
- Feel all the way down uterus — F 3.4
 - Move one hand down at a time
 - Use opposite hand to support uterus while you explore baby's outline
- Feel for
 - **Limbs** — feel uneven, 'knobby', may move away or even give you a kick. If baby in posterior lie — all you will feel is limbs
 - **Back** — feels firm all the way down side of uterus and won't move much if baby kicks
 - When you find the back, imagine where baby's anterior shoulder will be
 - This is position for listening to fetal heart rate



3.4

'Presenting' part

- Face toward woman's feet, put your hands either side of lower uterus — F 3.5
- Feel for presenting part
 - Head for cephalic presentation
 - Bottom for breech presentation



3.5

Note: If head or bottom has already dropped down into pelvis ready for birth (engaged) — you won't be able to feel presenting part. Check what is at top of uterus instead.

- Document in woman's hand held record and clinical notes

Listening to baby's heart rate

- Fetal heart beat may first be heard from 12–14 weeks pregnant
- **3 sounds in pregnant abdomen**
 - Sound of blood in woman's large abdominal artery (aorta). Swishing sound at same rate and rhythm as woman's pulse — **about 70–100 beats/min**
 - Sound of blood passing through placenta. Swishing sound at same rate as baby's heartbeat — **about 110–160 beats/min**
 - Sound of baby's heartbeat. Sound like galloping horse's hooves on hard ground, 'clipperty clop' — **about 110–160 beats/min**

Remember: May be more than 1 baby's heartbeat.

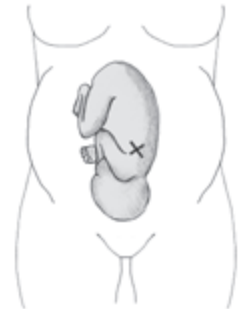
If heartbeat under 110 beats/min or over 160 beats/min — baby may be distressed. Roll woman onto left side, midwife/medical/obstetrician consult.

Do

- Maintain position of woman (p98) if she is comfortable

Finding the heartbeat

- **If you know baby's position from palpation (p99) —**
 - Put device on woman's abdomen over area where you think baby's anterior shoulder is — F 3.6
- **If unsure of baby's position —**
 - Put device in centre of abdomen midway between umbilicus and top of pubic bone
 - *OR* in early pregnancy before top of uterus reaches umbilicus (12–20 weeks), put probe 3 fingers above pubic bone
 - If baby bottom down (breech presentation) — heartbeat may be higher in abdomen
 - During labour (if head coming first), heartbeat will be heard lower down toward pelvis
 - If you can't hear heartbeat in any of these positions — move across abdomen in grid pattern until you have covered whole area
 - If distressing for mother — stop and do **midwifery/medical consult**



3.6

Remember: Take woman's pulse to be sure you are not listening to her heartbeat.



Using fetal heart doppler machine

- All machines are different — read manufacturer's instructions before use
- Probe/head of doppler delicate, be careful not to drop or bang against furniture
- Check batteries are working before starting

Do

- Put conductive gel over surface of probe/head, switch on machine. Have volume turned down
- Position probe/head. See *Finding the heartbeat* (p101)
- Turn up volume
- When you find heartbeat, count for 1 full minute

Using pinard stethoscope

- Position pinard. See *Finding the heartbeat* (p101)
 - Put widest end of pinard ('bell trumpet') on abdomen, press just firmly enough to seal rim against skin
 - Put your ear over smaller end of pinard (diaphragm)
 - Take your hand off shaft, balance pinard between your ear and woman's abdomen, listen for 'clipperty clop' of baby's heart beat
- When you find heartbeat, count for 1 full minute

Listening during labour

- Count heart rate for 1 full minute during and straight after contraction
- During first stage — check every 15 minutes, note if getting faster or slower
- During second stage (when woman pushing) — check during and after each contraction. Usually slows down during contraction but should increase again at end of contraction

Listening to twins' heartbeats

- To tell if twins (without experienced practitioner or ultrasound scan) you need helper with another doppler
- See if you can find a heartbeat in 2 separate places (eg one low and on right, other high and on left)
- Each of you should use doppler over separate heartbeat and start counting at exactly the same time
- Heart rates of twins that are not distressed will differ by up to 10 beats/min
 - If one twin is distressed — heart rates may be very different

Antenatal screening tests for baby

Small chance in every pregnancy that baby may have an abnormality. Some women won't want to know, other women are very anxious about possible problems. Screening for and diagnosis of abnormalities gives woman the option to prepare for a baby with a disability, or termination.

Increased likelihood of fetal abnormality if

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

Abnormalities detected by routine screening before the baby is born include

- Chromosomal — Down syndrome (trisomy 21), trisomy 18
- Structural abnormalities of musculoskeletal system, internal organs, nervous system

Screening tests

- Estimate chance that baby may have an abnormality
- Done at specific times during pregnancy (gestation specific), so accurate dating of pregnancy needed
 - If woman unsure of dates — dating scan

First trimester screen

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 pregnant
- Measurement at back of baby's neck taken on ultrasound between 11 and 13⁺⁶ weeks pregnant

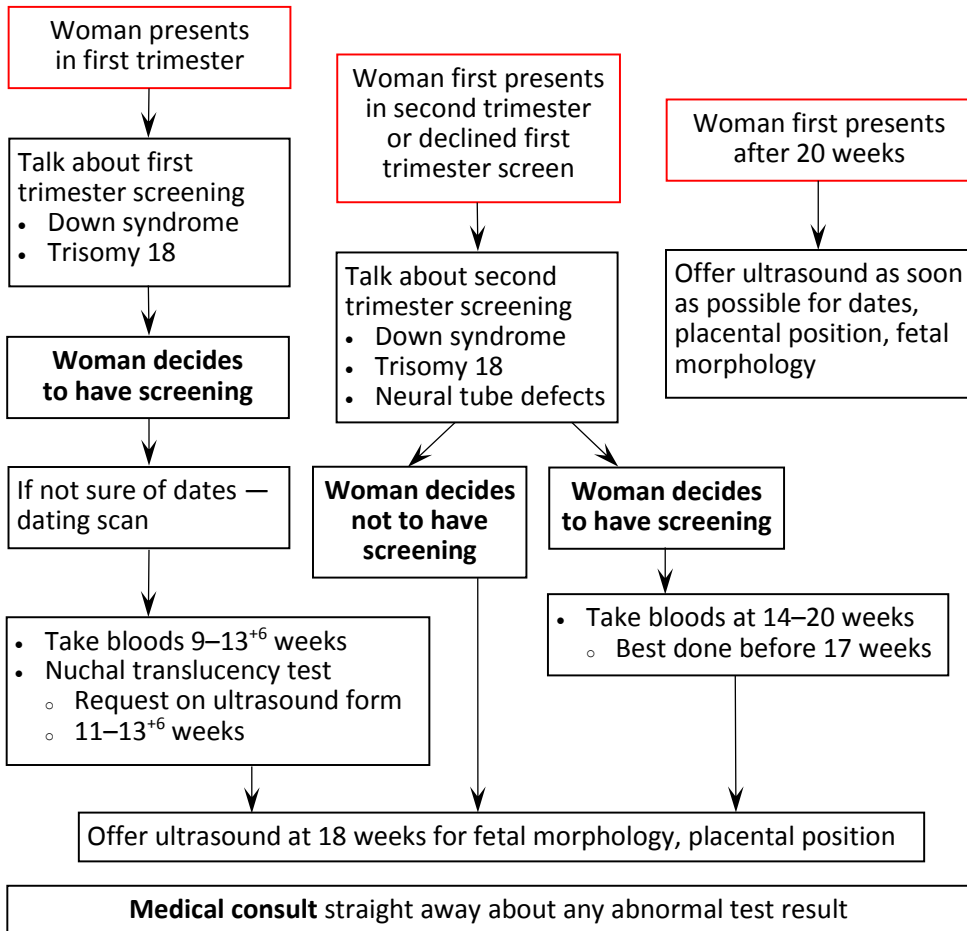
Second trimester screen

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 before 17 weeks to allow time for diagnostic testing if needed



Flowchart 3.1: Testing for fetal abnormalities



Diagnostic tests

Tests for chromosomal abnormalities

- 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)

Tests for fetal growth and anatomical abnormalities

- **First trimester/dating scan**
 - Most accurate for dating between 8 and 13⁺⁶ weeks pregnant
 - Reliably diagnoses multiple pregnancy
 - Detects some severe structural abnormalities (eg anencephaly)
 - Confirms pregnancy intrauterine, and helps exclude ectopic pregnancy
 - Confirms pregnancy viable — fetal heart activity can be seen on transvaginal ultrasound at 6–7 weeks in normal pregnancy
 - Can diagnose miscarriage
- **Obstetric morphology ultrasound**
 - Usually done at 18–20 weeks pregnant
 - Reliably detects some major anatomical abnormalities (eg open neural tube defects), but less sensitivity for others (eg heart abnormalities)
 - Detects other anomalies that may not have functional significance, but can be associated with chromosomal problems
 - Provides information about location of placenta, amount of amniotic fluid, growth of baby
 - If any abnormality — **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 abnormalities
 - Can provide valuable information
 - If woman had morphology ultrasound — further ultrasounds only needed if clinically indicated

Do

- Assess if increased chance of fetal abnormality ([p103](#))
- If specific concerns based on family history, personal history, age — **medical consult**
- Offer antenatal screening, see Flowchart 3.1
 - Talk with woman about how knowing her baby has an abnormality would affect her attitude to continuing or terminating the pregnancy
 - Use written material or decision aids (available online)
 - ‘Screening for fetal abnormalities and diagnosis’ poster www.menzies.edu.au/icms_docs/161977_Screening_Poster.pdf
 - ‘Checking for problems with the baby in early pregnancy’ flipchart www.menzies.edu.au/icms_docs/161962_Checking_for_problems_with_the_baby_in_early_pregnancy_2010_Flipchart.pdf



- If result indicates increased chance of Down syndrome — explain
 - Most babies with result indicating increased chance of Down syndrome are not actually affected
 - Further invasive diagnostic testing is needed to identify babies that are affected
- If result indicates increased chance of trisomy 18 — obstetric review with counselling about diagnostic testing
- If result indicates increased chance of neural tube defect — detailed ultrasound and obstetric review
- If any concerns — **medical consult**, consider referral to obstetrician

Preventing preterm birth

Babies born before 37 weeks (preterm) have greater risk of illness and death. Important to assess and manage risk of preterm birth. Women at risk always need shared care with midwife, doctor, obstetrician.

Risk factors for preterm birth

- History of preterm labour and birth
- Previous second trimester miscarriage
- Previous surgery on cervix
- Short cervical length
- Multiple pregnancy (eg twins)
- Abnormally shaped uterus
- Smoking

Ask

- History of preterm labour and birth
- Previous late miscarriage
- Date of most recent previous pregnancy
- Any vaginal bleeding during current pregnancy (*p14*) — more than spotting
- Previous surgery on cervix
- Smoking

Check

- Are pregnancy STI checks up to date (*p241*) — do if needed
- Confirm expected date of birth (current gestation)
 - If dating scan not done — request one
- Request transvaginal ultrasound for cervical length at same time as morphological ultrasound. Note on form 'Preterm birth risk'

Do

- If history of previous preterm birth at less than 34 weeks —
 - **Obstetric consult** at 12–13 weeks about starting **progesterone vaginal pessaries** 200mg every night from 14–36 weeks pregnant
 - If less than 28 weeks pregnant — refer for transvaginal ultrasound to measure cervical length, if not already done
- If cervical length less than 35mm on morphological ultrasound and transvaginal ultrasound not done — refer for transvaginal scan for accurate measure of cervical length
- If cervix length less than 10mm on transvaginal scan — **urgent obstetrician consult**
- If cervical length less than 25mm on transvaginal scan — **obstetrician consult** for management plan. Plan may include
 - Progesterone vaginal pessaries



- Possible surgery to put suture or tape around cervix (cervical cerclage)
- Encourage not to smoke while pregnant, talk about ways to stop smoking. See *Brief interventions* (CPM p138), *Antenatal education and birth planning* (p109)

Follow-up — if suture or tape around cervix

- Encourage woman to stay in or close to regional centre, if possible
 - Refer to a local health service or antenatal clinic at hospital where birth planned
- If staying in community —
 - Review every 2 weeks
 - Check for infection once a month
 - Swabs for STI, BV
 - Urine MC&S
 - **Medical consult** about any positive results
 - **Always** plan for hospital birth
 - Encourage woman to go to regional centre to wait for birth earlier than usual
 - If still in community at 36 weeks — hospital review
- 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 needed if woman 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. See *Emergency equipment* (p157)
 - See *Premature rupture of membranes* (p29) or *Preterm labour* (p26)

Antenatal education and birth planning

To promote healthy pregnancy and build woman's confidence in her ability to give birth and care for her baby.

- Document antenatal education in antenatal file notes and hand-held record
- First antenatal visit — **talk with woman about**
 - Pregnancy care options, who will provide care, support person
 - Lifestyle considerations — access to healthy food, nutrition, exercise, substance use
 - Screening tests in pregnancy ([p103](#))
- Following antenatal visits
 - Cover as much information as possible during the pregnancy

Warning signs

Tell woman to come to clinic if she is unwell, injured, has any of

- Vaginal bleeding, other fluid loss
- Abdominal pain
- Contractions/baby pains
- Urine problems (eg burning, frequency)
- Headaches, blurred vision, spots in front of eyes
- Fever, chills, feeling hot then cold
- Reduction in baby movements

Education

Nutrition

- Healthy diet is important before, during and after pregnancy
- Include plenty of fruits, vegetables, breads, cereals, foods high in absorbable iron (*below*)

Talk with woman about

- Access to healthy food and fluid options ([CPM p143](#)) — consider foods available in local store, woman's income, bush tucker
- Current diet
- Eating regular high fibre meals, drinking plenty of water
- Local recommendations about how much and what types of fish to eat
- Increasing intake of calcium, folate, iron
 - Iron supplements often needed, not easy to achieve body's need for iron in pregnancy even with a 'good diet'
 - Amount of iron absorbed from food depends on make-up of diet
 - Foods rich in vitamin C increase iron absorption
 - Tea and coffee contain phytates, reduce absorption of iron from food
 - Red meats have highly absorbable iron, help promote absorption of iron from other food



Foods to avoid

- Foods that may lead to listeriosis
 - Use only pasteurised or long life milk and milk products
 - Avoid soft/mouldy cheeses, uncooked or undercooked pre-prepared meats/sliced meats
 - Thoroughly wash raw vegetables including pre-packaged salads
- Foods that may lead to salmonellosis
 - Avoid raw or partially cooked eggs or meats, or food containing them (eg mayonnaise)

Supplements

- **Offer all women**
 - **Iodine** oral once a day – 150microgram. Can be in multivitamin designed for pregnancy and breastfeeding
 - Start when planning pregnancy, or as soon as pregnancy confirmed
 - If woman has pre-existing thyroid condition — **medical consult**
 - Important for normal development of fetal brain and nervous system
 - **Folic acid** oral once a day – 0.5mg *OR* at least 0.4mg in multivitamin designed for pregnancy and breastfeeding
 - *OR* if woman has diabetes, epilepsy, BMI more than 30, or had previous baby with neural tube defect — **folic acid** oral once a day – 5mg
 - Start when planning pregnancy, continue until 12 weeks pregnant
 - Reduces risk of baby having neural tube defect — anencephaly, spina bifida
- If has anaemia or at risk of anaemia ([p132](#)) — **iron** tablets
- Consider **vitamin C** for women at risk of anaemia, exposed to tobacco smoke

Exercise

Talk with woman about

- 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
- Pelvic floor exercises ([p283](#)) — important for woman's long-term health

Sex in pregnancy

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

Working during pregnancy

- For most women in most jobs, it is safe to continue working during pregnancy

Talk with woman about

- Pregnant employee entitlements. See Fair Work Ombudsman website www.fairwork.gov.au

- Avoiding heavy physical work or standing for long periods
- Personal concerns about her job (eg working with chemicals)

Common discomforts of pregnancy

- Talk about common discomforts of pregnancy and how to deal with them ([p115](#))

Mental health

- Significant emotional changes can occur during and after pregnancy — see *Perinatal depression and anxiety* ([p221](#))
- Pregnancy can sometimes worsen pre-existing mental health conditions
 - Make sure mental health team knows about pregnancy early

Talk with woman about

- Medicine already prescribed for mental health problems — **medical consult**
- Support services
- Coming to clinic for check if she feels unwell
- Warning signs, spiritual, emotional and physical symptoms of depression during pregnancy and after baby is born ([p221](#))

Domestic/family violence

- Be aware of signs of domestic/family violence ([p324](#))
- May increase or be triggered by pregnancy
- Explain that asking about it is routine part of antenatal care
- Be aware of mandatory reporting requirements in your state/territory
- Refer to support services

Prescribed and over the counter medicines

- Many medicines and drugs can harm baby if taken in pregnancy or while breastfeeding
- Usual medicines may need to be changed or adjusted during pregnancy — medical review
- If not sure whether medicine safe in pregnancy or breastfeeding — **medical/pharmacist consult**
 - May need to balance benefits and risks of using medicine
- Tell woman to make sure anyone who prescribes medicines for her knows she is pregnant or breastfeeding

Substance use in pregnancy

- Smoking
 - No safe level of smoking in pregnancy
 - Cigarettes can cause low birthweight or preterm baby
 - Best to stop smoking before becoming pregnant or early in pregnancy. But stopping at any time is good



- No evidence that ‘cutting down’ number or strength of cigarettes protects fetus. **Do not** recommend as only strategy
- For medicines to stop smoking — see *Tobacco — Pregnant or breastfeeding women* ([CARPA STM p225](#))
- Alcohol
 - No safe level of alcohol in pregnancy — important to avoid alcohol as soon as planning pregnancy
 - Drinking alcohol in pregnancy can lead to fetal alcohol spectrum disorder (FASD) ([CARPA STM p152](#))
 - Binge and heavy drinking put baby at most risk
- 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 of chewing tobacco in pregnancy not known, but risks thought to be similar to smoking
- Cannabis (gunja, marijuana) ([CARPA STM p218](#))
 - Can cause preterm or low birthweight babies
 - Best to stop use before getting pregnant
- Volatile substance misuse ([CARPA STM p226](#))
 - No safe level of petrol, glue, solvent sniffing in pregnancy
- Kava ([CARPA STM p220](#))
 - Effect of drinking kava before or during pregnancy not known
 - Advise to stop drinking kava

Birth planning

Women living in remote and rural areas without birthing services are strongly encouraged to give birth in regional hospital. Usually transfer at 38 weeks unless medical or obstetric complications, but also depends on individual health service policy.

Give information during antenatal period to prepare woman for this.

Talk with woman about

Warning signs for urgent hospital review

- Unusual headaches
- Vaginal bleeding
- Any sign of infection including fever
- Reduced baby movements

Planning for hospital birth

- Accommodation in regional centre
 - Hostel accommodation may be available — provides meals, bedding, public phone, washing machine, transport to and from hospital and appointments

- Organise appropriate escort, preferably female, who can support her through experience. 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
 - If other children — childcare arrangements in community
 - Financial situation in advance

Try to arrange for woman and support person to tour hospital before the birth. When she goes to regional hospital for routine ultrasound usually a good time.

Ongoing antenatal care in regional centre, labour and birthing

- What happens in regional centre
 - Hospital midwife assessment in first 24 hours — same as clinic check, possible cardiotocograph (CTG)
 - Weekly appointments with doctor/midwife until she comes into labour
 - Admission to labour ward. Postnatal ward for about 2 days
 - Return to hostel on discharge until transport back to community
- Signs of labour starting include
 - ‘Show’ — small amount of blood and mucus
 - Irregular abdominal pains ‘coming and going’
 - Low back pain
- When to go to hospital labour ward
 - Painful regular contractions
 - Persistent low back pain
 - Rupture of membranes
- Mechanism of normal labour and positions for pushing during birth
- Pain relief in labour
 - Walking, position, mental coping strategies
 - Breathing techniques
 - Bath/shower
 - Opioid injection
 - Nitrous oxide gas (eg *Entonox*)
 - Epidural
- Variations in labour leading to instrument assisted birth or Caesarean section
 - Long labour and woman too tired to push effectively
 - Baby becoming stressed, needing help to birth more quickly
 - Baby too big to fit through birth canal
- Procedures woman might experience during birth
 - Digital vaginal exam with or without artificial rupture of membranes
 - Cardiotocograph, fetal heart monitoring with doppler, fetal scalp monitoring
 - Portable ultrasound



After the birth

- How long she will stay in hospital
- Who will visit, provide food, stay with her, do washing, look after children
- Breastfeeding ([p199](#))
 - Benefits of breastfeeding for baby and mother, supports available
- Looking after baby
 - Bathing/hygiene and care of baby in hospital and at home
 - How to reduce risk of SIDS by sleeping baby safely ([p196](#))
 - Birth payment, Medicare and family allowance options
 - Community support options
- Personal health issues
 - Importance of postnatal check for herself and baby
 - Choices for contraception ([p335](#)), especially during breastfeeding

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

Nausea and vomiting

Nausea with/without vomiting common in first 15 weeks.

- Called 'morning sickness', but can happen at any time of day
- Severe vomiting (hyperemesis gravidarum) can cause dehydration, unbalanced body salts (electrolytes), poor nutrition

Medical consult if

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

Check

- Weight
- Temp, pulse, RR, BP
- Hydration — look at skin, mouth
- Urine — U/A, note any ketones, send for MC&S
- Baby's heart rate
- Baby movements (after 18 weeks)

Do not

- **Do not** give iron tablets unless woman has anaemia or at risk of anaemia ([p132](#))

Do

- Encourage woman to talk with grandmothers about traditional foods to avoid or to help prevent nausea
- Suggest changes in diet and habits
 - Small, easily digested meals more often
 - Fluids — teas like lemongrass or ginger tea, plenty of water between meals
 - Dry crackers or toast before getting up
 - Avoid fatty foods, spicy or hot foods, foods with strong smell
 - Don't lie down after eating

- Give **pyridoxine** (vitamin B6) oral 3 times a day (tds) – adult 25mg
 - Can take up to 3 days to work, need to keep taking to prevent nausea
- Review in 1 week to see if changes have helped
- **Medical consult**
 - May suggest — metoclopramide oral 3 times a day (tds) – 60+kg 10mg, 40–59kg 5mg. First dose may need to be given IV/IM (same dose)
- May need to go to hospital for IV fluids and tests (eg obstetric ultrasound) to look for problems or other causes (eg multiple pregnancy)

Heartburn

Burning feeling in chest, may be bitter taste in mouth. Caused by hormones and later in pregnancy by growing baby pressing on oesophagus and stomach.

Do

- Suggest
 - Small meals more often
 - Avoid fatty or spicy foods
 - Drink plenty of water
 - Try ginger tea
 - Avoid smoking, alcohol, coffee, chocolate
 - Sleep in semi-upright position
 - Try antacids
 - Try H₂ antagonist (eg ranitidine)

Constipation

Hormones can slow down muscles in bowel — causes constipation, leads to haemorrhoids. Can also be caused by iron tablets.

Do

- Suggest
 - Increase fibre in diet — prunes, dried fruits, fresh fruits and vegetables, wholegrain breads and cereals
 - Eat more bush foods — bush sultana, tomato, orange, seed damper, yams
 - Drink more water — at least 8 glasses a day
 - Walk for at least 30 minutes every day
- Try changes for 1 week before adding 'bulking agent' (eg *Metamucil*)
- If these things don't work — **medical consult**

Preventing constipation will reduce occurrence and severity of haemorrhoids.

- If haemorrhoids do occur
 - Rest and elevating legs can help
 - Ice packs and mild local anaesthetic creams to anal area help pain

Leg cramps

Cramps in lower legs mainly happen at night after 28 weeks of pregnancy.

Do

- Suggest
 - Sitting up and pulling toes up toward shins to stretch calf muscle
 - Getting up and walking around when cramps come
 - Gentle massage — with rubbing medicine or heat
 - Drinking plenty of water

Other common problems that may occur

Include backache, ligament pain, varicose veins, faintness, tiredness and poor sleeping, carpal tunnel syndrome, headache, swollen ankles, urinary frequency, vaginal thrush ([p254](#)).

- **Medical/midwife consult** if concerned

Diabetes in pregnancy

Number of related medical conditions with high blood glucose levels.

- **Gestational diabetes mellitus (GDM)**
 - Impaired glucose tolerance that starts in second half of pregnancy
- **Pre-existing Type 2 or Type 1 diabetes mellitus (PDM)**
 - Type 2 or Type 1 diabetes diagnosed before pregnancy
- **High BGL in early pregnancy** in women not already known to have diabetes — likely to be Type 2 diabetes
 - High risk of complications for woman and baby — treat as PDM

Diagnosis and management of diabetes in pregnancy is important

- Diabetes in pregnancy is common and increasing in all age groups
 - Present in 10–20% of pregnant Aboriginal women
- Aim to keep BGL at normal levels to reduce complications
- Complications in PDM
 - Woman — pre-eclampsia, worsening of kidney disease, birth trauma
 - Baby — congenital malformations, miscarriage, stillbirth, prematurity, small baby (IUGR), large baby (macrosomia), birth trauma, low BGL as newborn, increased risk of early onset Type 2 diabetes
- Complications in GDM
 - Woman — pre-eclampsia, higher risk of Type 2 diabetes in next 5 years
 - Baby — large baby (macrosomia), birth trauma, low BGL as newborn, increased risk of Type 2 diabetes as adult

Pre-pregnancy counselling for women with known diabetes

- Talk with women with known PDM before they get pregnant about
 - Need for excellent blood glucose and metabolic control before getting pregnant (eg BP control, weight loss, improved nutrition, exercise)
 - Addressing other health problems (eg heart, kidney, eye problems)
- If woman likely to become pregnant soon after stopping contraception — review medicines. See *Do — medical consult (p120)*
- Monitor woman for pregnancy at routine visits, advise to notify clinic as soon as she thinks she is pregnant
- If planning pregnancy or as soon as pregnancy confirmed — start
 - **Folic acid** oral once a day – 5mg
 - **Iodine** oral once a day – 150microgram. Can be in multivitamin designed for pregnancy and breastfeeding
 - If woman has thyroid condition — **medical consult**
- For topics to cover — see *Education (p123)*

Risk factors for diabetes in pregnancy

- Ethnicity — Aboriginal or Torres Strait Islander, Asian, Indian, Pacific Islander, Maori, Middle Eastern, non-white African
- Past history of GDM or high BGL with/without pregnancy
- Family history of diabetes (parents, sister, brother)
- Previous large for gestational age baby
- Obesity — pre-pregnancy BMI more than 30
- Age — over 35 years
- Polycystic ovary syndrome ([p307](#))
- Previous adverse pregnancy outcome — unexplained perinatal loss, congenital malformation
- Medicines — antipsychotics, corticosteroids

Screening for diabetes in pregnancy

- First antenatal visit — screen all pregnant women not already known to have diabetes who have risk factors (*above*). Best before 13 weeks pregnant
 - All Indigenous women 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

First antenatal visit (or within next 2 weeks)**Women not already known to have diabetes AND with risk factors.**

- Fasting 75g OGTT (0, 1 and 2 hour blood glucose tests) ([CPM p376](#))
- *OR* if fasting OGTT not possible — random venous BGL and HbA1c. Use POC test if available
- If result normal — do OGTT at 24–28 weeks pregnant to test for GDM
- See Table 3.3 to interpret results
- If abnormal result confirmed (treat as GDM or PDM) — **medical consult**

At 24–28 weeks pregnant**ALL women not already known to have diabetes.**

- HbA1c can't be used to screen for GDM. Cut off points unknown
- Do fasting 75g OGTT (0, 1 and 2 hour blood glucose tests)
- Diagnosis of GDM if any **one** result is
 - 0 hour plasma glucose 5.1mmol/L or more
 - 1 hour plasma glucose 10mmol/L or more
 - 2 hour plasma glucose 8.5mmol/L or more
- If diagnosis of GDM — **medical consult**



Table 3.3: Interpreting blood glucose test results

Result for fasting OGTT (mmol/L)	Result for HbA1c	Result for random venous blood glucose	What it means
<ul style="list-style-type: none"> • 0 hour glucose less than 5.1 • <i>AND</i> 1 hour glucose less than 10 • <i>AND</i> 2 hour glucose less than 8.5 	Less than 39mmol/mol (5.7%)	Less than 5.1 mmol/L	<ul style="list-style-type: none"> • Normal • Do OGTT at 24–28 weeks pregnant
<ul style="list-style-type: none"> • 0 hour glucose 5.1–6.9 • <i>OR</i> 1 hour glucose 10 or more • <i>OR</i> 2 hour glucose 8.5–11 	39–47 mmol/mol (5.7–6.4%)	5.1–11mmol/L	<ul style="list-style-type: none"> • Do second test to confirm – do OGTT if not already done • If confirmed — treat as GDM
<ul style="list-style-type: none"> • 0 hour glucose 7 or more • <i>OR</i> 2 hour glucose 11.1 or more 	48mmol/mol (6.5%) or more	11.1mmol/L or more	<ul style="list-style-type: none"> • Do second test to confirm – do OGTT if not already done • If confirmed — treat as PDM

Antenatal care for PDM

At first antenatal visit after diagnosis

Check

- Add to routine antenatal check
 - Take blood for HbA1c, TSH, UEC *AND* if taking metformin — serum B12
 - Urine ACR
- Vision (*CPM p148*) — baseline check to monitor for retinopathy
 - If retinopathy present – eye check each trimester

Do

- Give **folic acid** oral once a day until 12 weeks pregnant – 5mg
- Give **iodine** oral once a day – 150microgram. Can be in multivitamin designed for pregnancy and breastfeeding
 - If woman has thyroid condition — **medical consult**
- **Medical consult** — include urgent medicines review
 - Stop all oral blood glucose control medicines except metformin
 - Start **insulin** if needed
 - Stop ACE inhibitor or ARB — contraindicated in pregnancy
 - If used for BP control — consider safer medicine (eg methyldopa, labetalol)

- Stop statins and other lipid lowering medicines — contraindicated in pregnancy
- All women with PDM need medicines for good blood glucose control
- If not already doing — start blood glucose monitoring ([p123](#))
 - Teach woman how to self-monitor ([CPM p381](#)) and keep BGL diary
 - Review BGL diary and meter every week — see *Blood glucose control* ([p123](#))
- **Diabetes educator consult.** Can use telehealth
- Give advice on diet and physical activity ([CPM p143](#)) to help control blood glucose
- Arrange as soon as possible
 - Ultrasound scan to date pregnancy, if not already done
 - Obstetric review
 - Endocrinologist/physician review
 - Retinal eye exam — fundal camera or optometrist/ophthalmologist
 - If in NT or north QLD — refer to Diabetes in Pregnancy Clinical Register
- Develop joint management plan with doctor, obstetrician, midwife, diabetes educator, endocrinologist, nutritionist
 - Early specialist advice can be by telehealth
- Make sure woman on recall system to be followed up after birth — see *Follow-up of medical problems in pregnancy* ([p209](#))

Additional antenatal care

Additional care needed due to increased risk of complications ([p118](#)).

Check

- Extra ultrasounds as ordered by obstetrician — could include
 - 24 weeks for heart assessment
 - 28–30 and 34–36 weeks for fetal growth assessment
- At 28 and 36 weeks
 - Take blood for UEC, LFT, HbA1c
 - Urine ACR

Do

- Antenatal check every 2 weeks until 28 weeks pregnant
 - *THEN* every 1 week from 28–36 weeks
- Arrange for transfer to regional centre at 36 weeks to wait for birth — hospital birth
- Medical review every 4 weeks to assess BGL control
- Strongly encourage testing for fetal abnormalities ([p103](#))
- Education about diabetes in pregnancy ([p123](#))



Antenatal care for GDM

At first antenatal visit after diagnosis

Check

- Add to routine antenatal check ([p89](#))
 - Take blood for HbA1c, TSH, UEC
 - Urine ACR

Do

- Start blood glucose monitoring ([p123](#))
 - Teach woman how to self-monitor ([CPM p381](#)) and keep BGL diary
 - Review BGL diary and meter weekly — see *Blood glucose control* ([p123](#))
- **Medical consult**
- **Diabetes educator consult.** Can use telehealth
- Most women can control blood glucose with diet and physical activity ([CPM p143](#))
- Arrange as soon as possible
 - Obstetric review
 - If in NT or north QLD — refer to Diabetes in Pregnancy Clinical Register
- Develop joint management plan with doctor, obstetrician, midwife, diabetes educator, nutritionist
 - Early specialist advice can be by telehealth
- Make sure woman on recall system to be followed up after birth — see *Follow-up of medical problems in pregnancy* ([p209](#))

Additional antenatal care

Additional care needed due to increased risk of complications ([p118](#)).

Check

- Extra ultrasounds as ordered by obstetrician. Could include
 - 28–30 and 34–36 weeks for fetal growth assessment
- At 28 and 36 weeks
 - Take blood for UEC, LFT, HbA1c
 - Urine ACR

Do

- Antenatal check every 2–4 weeks until 36 weeks pregnant
 - *THEN* every week from 36 weeks pregnant, if in community
 - If on insulin — see every week from 28 weeks
- Medical review every 4 weeks to assess BGL control
- Arrange for transfer to regional centre at 38 weeks to wait for birth — hospital birth
- Education about diabetes in pregnancy ([p123](#))

Education

- Importance of healthy diet, physical activity, limiting weight gain
- Complications ([p118](#)) for mother and baby due to PDM and GDM
- Need for excellent blood glucose and metabolic control
 - Need to monitor and record own BGL in pregnancy
 - Possible need for medicines including insulin
- Need for extra checks in pregnancy
- Hospital birth recommended
 - Baby may also need special care straight after birth

Blood glucose control for PDM and GDM

- Woman should measure and record 4 BGL a day at different times
 - If not able to do 4 — do at least 2, one fasting and one 2 hours after starting main meal of day
- If BGL high — may need to take more measurements

BGL monitoring

- Best times to monitor BGL
 - Before breakfast — morning fasting
 - 2 hours after starting breakfast
 - 2 hours after starting midday meal
 - 2 hours after starting evening meal
- If taking more than 1 dose of insulin a day — check before and 2 hours after starting main meal

- Review BGL diary and meter in clinic at least once a week
 - Send BGL diary results to diabetes educator for review
 - If BGL within target range — no change in diabetes management
 - If BGL outside target range 2 or more times in 1 week — **diabetes educator consult**

BGL targets

- Before breakfast — 5.0mmol/L or less
- 2 hours after starting meal — 6.7mmol/L or less

- **Diabetes educator consult** at least once a week, more often if BGL high
 - Advice on blood glucose management and adjusting insulin doses can be given over telephone
 - If problems getting good blood glucose control — diabetes educator will talk with specialist
- Some women need to be sent to hospital to stabilise diabetes
- Need BGL and HbA1c to monitor blood glucose control in pregnancy
 - HbA1c lower in pregnancy due to increased red blood cell turnover



Medicines for PDM and GDM

- Oral agents not part of standard guidelines but often used
 - Need to decide if benefits of oral medicines outweigh risks to baby
 - Doctor will talk with woman on individual basis

Metformin

- Can be used
 - With diet and exercise for mild GDM
 - For woman who can't or won't take insulin
 - With insulin if woman with PDM obese and insulin dose will be very high
- If woman on metformin before pregnancy — continue
- Use standard doses as for non-pregnant woman (*CARPA STM p258*)

Insulin

- 'Gold standard' for blood glucose control in pregnancy
 - See Table 3.4 for suggested regimes
- Recommended if blood glucose not controlled by diet and exercise, or metformin
- Must initially be prescribed by doctor or nurse practitioner
 - Dose changes are made by person identified in management plan as responsible for advising on blood glucose control (eg doctor, diabetes educator)

Starting insulin treatment

- Type of insulin depends on pattern of BGL and woman's ability to manage insulin. **Medical/diabetes educator consult** about best insulin regime
- Start and adjust treatment using Table 3.5 as guide
 - For glargine see *Glargine insulin treatment in Type 2 diabetes (CARPA STM p261)*
- Approximate total dose to start with
 - 0.3 units/kg/day for PDM
 - 0.1–0.2 units/kg/day for GDM
- After each change in insulin dose, monitor BGL for 2 days before making another change

Table 3.4: Recommended insulin regimes

Insulin routine	Comments
<p>Basal bolus regime</p> <ul style="list-style-type: none"> • Short-acting insulin (eg <i>NovoRapid</i> or <i>Humalog</i>) — before meals • AND intermediate-acting insulin (eg isophane) or long-acting insulin (eg glargine) — in evening before bed (nocte) 	<ul style="list-style-type: none"> • Most widely used, likely to give best results • Complex treatment routine <ul style="list-style-type: none"> ◦ Insulin injections usually 4 times a day ◦ Short-acting insulin only used with food ◦ Some women need fewer doses of short-acting insulin ◦ Woman needs to be motivated ◦ Need experienced doctor or diabetes educator to advise on insulin dose adjustment • Use when BGL stays very high before or after meals
<p>NovoMix30 (30% short-acting, 70% intermediate-acting insulin) twice a day — with breakfast and evening meal</p>	<ul style="list-style-type: none"> • Simple treatment routine • Not recommended as first line during pregnancy — only start or continue on specialist advice • Use when BGL high through 24 hour period AND basal bolus regime not practical • If not eating regular meals — premixed dose can increase risk of low BGL (hypo)
<p>Isophane (intermediate-acting insulin) — in evening before bed (nocte)</p>	<ul style="list-style-type: none"> • Simple treatment routine • Use when only morning fasting BGL high
<p>Glargine (long-acting insulin)</p>	<ul style="list-style-type: none"> • Simple treatment routine • Appears safe in pregnancy • Useful for women with established PDM • Not yet part of standard guidelines

Table 3.5: Guide to starting and adjusting insulin doses

Insulin regime	Starting doses	Dose adjustment
Basal bolus regime <ul style="list-style-type: none"> • Short-acting insulin (eg <i>NovoRapid</i> or <i>Humalog</i>) • AND intermediate-acting insulin (eg isophane) OR long-acting insulin (eg glargine) 	<ul style="list-style-type: none"> • Breakfast <ul style="list-style-type: none"> ◦ Short-acting insulin — 20% of total daily dose • Lunch <ul style="list-style-type: none"> ◦ Short-acting insulin — 10–20% of total daily insulin dose • Evening meal <ul style="list-style-type: none"> ◦ Short-acting insulin — 20% of total daily insulin dose • Before bed <ul style="list-style-type: none"> ◦ Intermediate or long-acting insulin — 40–50% of total daily insulin dose 	<ul style="list-style-type: none"> • If before breakfast BGL high as a pattern — increase intermediate or long-acting insulin dose by 2–4 units • If after meal BGL high as a pattern — increase short-acting insulin dose by 2–4 units
NovoMix 30	<ul style="list-style-type: none"> • Twice a day <ul style="list-style-type: none"> ◦ $\frac{2}{3}$ before breakfast ◦ $\frac{1}{3}$ before evening meal 	<ul style="list-style-type: none"> • If before breakfast BGL high as a pattern — increase evening dose by 2–4 units • If daytime BGL high as a pattern — increase breakfast dose by 2–4 units
Isophane	<ul style="list-style-type: none"> • Give total dose in evening before bed 	<ul style="list-style-type: none"> • If before breakfast BGL high as a pattern — increase dose by 2–4 units

Follow-up of PDM and GDM

- Postnatal follow-up of woman with diabetes in pregnancy ([p210](#))

High BP (hypertension) 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

Due to

- Chronic high BP
 - Known to have high BP before pregnancy
 - *OR* high BP recorded in first 20 weeks of pregnancy
- Pregnancy-induced (gestational) high BP
 - High BP first recorded when more than 20 weeks pregnant
- Pre-eclampsia
 - More than 20 weeks pregnant
 - High BP *AND* one or more other signs or symptoms — see Table 3.6
 - If systolic BP 170mmHg or more **or** diastolic BP 110mmHg or more — severe pre-eclampsia
 - **Medical emergency** — see *Severe pre-eclampsia* (p21) straight away

High BP can cause

- Poor growth of baby
- Death of baby in the uterus
- Placental abruption (part or all of placenta comes away from wall of uterus)
- Preterm labour, preterm delivery
- If worsening of chronic high BP — ‘end-organ’ damage for mother (eg to kidneys, liver, brain)
- If severe high BP — mother to fit (eclampsia)

Check

- Assess risk factors for pre-eclampsia (p128) at first antenatal visit
 - If risk factors — **medical consult**
 - May need to see obstetrician early in pregnancy
 - May suggest low dose aspirin or calcium supplements to reduce risk
- BP at every antenatal visit

Do — if BP high at antenatal visit

- Take BP again after woman has rested for 10 minutes
- Finish routine antenatal check (p86) — note if protein on U/A
- Check file notes for
 - Risk factors for pre-eclampsia
 - How many weeks pregnant (gestation)
 - U/A or 24 hour urine results earlier in pregnancy — any protein
 - Last urine MC&S
- Ask about symptoms of pre-eclampsia — see Table 3.6
- Check for signs of pre-eclampsia — see Table 3.6



Medical consult about findings and management.

- If managing as pre-eclampsia — see *Severe pre-eclampsia* straight away (p21)
- If managing as high BP — see *Pregnancy-induced high BP* (p129) or *Chronic high BP* (p130)

Risk factors for pre-eclampsia

- Medical
 - High BP
 - Kidney disease, diabetes
 - Overweight or obese
 - Autoimmune disease (eg SLE)
- This pregnancy
 - 40 years or over
 - First pregnancy or more than 10 years since last pregnancy
 - Twin/multiple pregnancy
- History
 - Previous pregnancy with high BP or pre-eclampsia
 - Family history of pre-eclampsia

Table 3.6: Signs and symptoms of pre-eclampsia and eclampsia

Body organ or system	Signs	Symptoms
Cardiovascular	<ul style="list-style-type: none"> • High BP • Platelet count less than 100,000/microL • Bleeding from venipuncture 	<ul style="list-style-type: none"> • Swollen ankles
Lungs	<ul style="list-style-type: none"> • Pulmonary oedema 	<ul style="list-style-type: none"> • Breathlessness
Kidneys	<ul style="list-style-type: none"> • More than 2+ protein on U/A • Creatinine more than 90micromol/L 	<ul style="list-style-type: none"> • Low urine output
Liver	<ul style="list-style-type: none"> • Tender abdomen — right upper quadrant 	<ul style="list-style-type: none"> • Severe epigastric or right upper abdomen pain • Nausea and vomiting
Neurological	<ul style="list-style-type: none"> • Fits • Brisk reflexes, muscle spasms • Stroke 	<ul style="list-style-type: none"> • New headache that doesn't go away • Visual changes (eg shooting stars, spots)

Pregnancy-induced high BP

- Need to send to hospital to
 - Check for pre-eclampsia
 - Work out management plan

Check

- Take blood for FBC, UEC, LFT
- If signs or symptoms of pre-eclampsia — urine for U/A and MC&S

Do

- **Medical consult** about sending to hospital — straight away or non-urgent referral
- If sending to hospital straight away —
 - **Medical consult** about whether to start medicine to reduce BP
 - Check BP every hour until transfer
 - **Medical consult** if more than systolic 160mmHg or diastolic 100mmHg
- If non-urgent referral —
 - See **every day** while waiting for hospital appointment
 - Do routine antenatal check ([p86](#))
 - Ask about symptoms of pre-eclampsia — see Table 3.6
 - **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 pre-eclampsia at each visit — see Table 3.6
 - **Medical consult** about findings from each visit
 - BP target — usually less than 140/90mmHg
 - Using medicine to control BP
 - Often methyldopa or labetalol
 - **Do not** use ACE inhibitor or ARB — contraindicated in pregnancy
 - 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
 - Pathology
 - Take blood for FBC, UEC, LFT once a week, or twice a week if pre-eclampsia
 - Take blood on day transport 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
 - Collecting urine for U/A once or twice a week
 - Regular hospital checks, obstetric ultrasounds, cardiotocogram (CTG)

- Plan to send to hospital if pre-eclampsia or severe high BP develop
- Plan for birth in hospital — may need epidural or Caesarean section

Follow-up

- See *Postnatal follow-up* of women with high BP in pregnancy ([p209](#))

Chronic high BP

If planning pregnancy — see *Pre-pregnancy counselling* ([p84](#))

Check

- First antenatal visit
 - Check file notes — history of kidney disease, BP management plan
 - Also take blood for UEC, LFT, uric acid
 - Urine ACR ([CARPA STM p237](#))
- After 20 weeks
 - Signs or symptoms of pre-eclampsia — see Table 3.6

Do

- First antenatal visit
 - **Medical consult**
 - Stop ACE inhibitor or ARB — both contraindicated in pregnancy
 - Use a safer BP lowering medicine, often methyldopa or labetalol
 - **Medical consult** about stopping beta blocker or diuretic
 - Arrange renal ultrasound (if not already done) to look for causes of high BP. Do at same time as obstetric ultrasound
 - Arrange medical review, refer to specialist and obstetrician if needed
- Follow management plan
 - Routine antenatal care ([p86](#))
 - Additional monitoring and treatment as advised by specialist
 - BP target
 - Plan for birth in hospital — may need epidural or Caesarean section
- **Medical consult** straight away if
 - Systolic BP more than 140mmHg or diastolic BP more than 90mmHg
 - Protein in urine for first time or it gets worse
 - Other signs and symptoms of pre-eclampsia — see Table 3.6

Follow-up

- See *Follow up of medical problems in pregnancy — High BP* ([p209](#))

Unplanned birth in community

Woman with high BP goes into labour in community.

- **Medical consult** straight away about
 - Sending to hospital
 - Stopping labour with medicines
 - Management plan if birthing in community
- If labour proceeds
 - See *Labour and birth* (p158)
 - Give good pain relief as directed by doctor or midwife
 - Get ready for a sick baby — see *Newborn resuscitation* (p70)
 - Be ready in case woman has a fit (p19)
 - Send mother and baby to hospital after birth — still at risk of complications
- **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

Anaemia (weak blood) in pregnancy

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

Causes

- **Most common** — iron deficiency anaemia
 - Can be due to
 - Diet low in 'absorbable iron' ([p109](#)) — doesn't meet high iron needs in pregnancy
 - Less than 2 years between pregnancies
 - Chronic disease, chronic bleeding, parasitic disease (eg hookworm)
- **Less common but important**
 - Vitamin B12 deficiency, folate deficiency (megaloblastic anaemia)
 - Genetic abnormalities resulting in microcytic anaemia (low MCV)

Risk factors for low iron stores at start of pregnancy

- Diet low in 'absorbable iron' — significant problem in remote communities
- Already given birth 5 or more times (grand multiparity)
- Adolescent pregnancy — iron also needed for mother's own development
- Twin or multiple pregnancy
- Recent or current breastfeeding of another child
- Chronic conditions or infections — diabetes, kidney disease, tuberculosis

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 ([CARPA STM p264](#))
- **For baby**
 - Low iron stores cause anaemia. See *Anaemia (weak blood) in children* ([CARPA STM p116](#))
 - Low birth weight, preterm birth, perinatal mortality
 - Long-term effects on child's development

Ask

- Recent bleeding — vaginal ([p14](#)), rectal, gums, nose ([CARPA STM p110](#))
- Periods before pregnancy — long or heavy
- Iron in diet

Check

- Routine antenatal care includes
 - First antenatal visit — take blood for FBC, iron studies *AND* POC test for Hb
 - 28 weeks — take blood for FBC, iron studies *AND* POC test for Hb
 - 36 weeks — take blood for FBC *AND* POC test for Hb

- A fall in MCV is the earliest sign of iron deficiency

Other causes of anaemia

- 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, TSH, LFT
 - Take blood for UEC if not done in previous 12 months

Do

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

Do — iron deficiency anaemia

- Talk about access to healthy food, healthy diet (*CPM p143*)
 - Getting enough iron and folic acid — red meat, iron fortified cereals and drinks
 - Foods rich in vitamin C (eg citrus fruit, tomatoes, berries, juice)
- Give iron replacement (*below*)
 - 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
- Give **vitamin C** oral once a day – 500mg to improve absorption of dietary iron
- If from area where hookworm is/has been common *OR* if MCV low and eosinophil count raised — give **pyrantel** oral once a day for 3 days – adult 1g
 - **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 once a day – 1 tablet (up to 100mg elemental iron)
 - If woman has side effects — give lower dose
 - Iron dose in pregnancy multivitamins may be lower than recommended
- Take iron tablets with water
 - Best taken on an empty stomach (1 hour before meal)
 - 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)
- Continue until 6–8 week postnatal check, reassess

- **Iron** medicine is dangerous in overdose
- Need to keep in childproof container, in a safe place

Iron IV infusion

- Use if oral iron doesn't work or can't be used. **Medical consult**
- Dates must be checked with dating scan before giving
- **Do not use**
 - In first trimester
 - If signs of infection
- **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
 - Clinician trained in life support stays with person during infusion
 - Infusion pump used
- See *Giving iron by IV infusion (CPM p353)*
- **Do not** restart oral iron until at least 5 days after infusion given

Table 3.7: Ferric carboxymaltose (eg Ferinject) IV infusion by weight and Hb level

Weight		Ferric carboxymaltose dose (50mg/mL strength)			Mix with normal saline	Infusion time
		Hb 70–89g/L	Hb 90–99g/L	Hb 100–110g/L		
36–69kg	Week 1*	20mL	20mL	20mL	250mL	15 min
	Week 2*	10mL	10mL	–	250mL	15 min
70kg and over	Week 1*	20mL	20mL	20mL	250mL	15 min
	Week 2*	20mL	10mL	10mL	250mL	15 min

* **Do not** give more than 20mL (1000mg) in a single dose. Give second dose at least 1 week after first.

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 — folate deficiency (megaloblastic) anaemia

Anaemic with high MCV and low red blood cell folate.

- **Medical consult**

- Before starting treatment
 - If vitamin B12 also low — get advice
- If no improvement after 4 weeks of treatment
- Give **iron–folic acid** oral once a day – 1 tablet (up to 100mg elemental iron)
- **AND folic acid** oral once a day – 5mg
- Take blood for FBC 2 weeks after starting treatment and again 2 weeks after that

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**

Rheumatic heart disease in pregnancy

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

- If planning pregnancy — see *Pre-pregnancy counselling* (p84)

Problems

- Severe heart disease in pregnancy puts woman and fetus at risk
- Heart failure may occur in late pregnancy
- May be infection of heart valve (endocarditis). Risk higher with artificial valve

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
- Urgent referral to obstetrician and physician/cardiologist as soon as possible
- If moderate to severe RHD —
 - Need closely-managed pregnancy with medical and obstetric specialist involvement
 - Delivery in hospital ICU

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

Antenatal care

- Follow joint management plan from physician/cardiologist and obstetrician
- Woman with an artificial heart valve takes anticoagulant to stop clots — usually warfarin. In pregnancy warfarin may be stopped by physician or obstetrician and replaced with another medicine — usually low molecular weight heparin (eg enoxaparin) given by daily injections
- Continue routine antibiotic prophylaxis during pregnancy (*CARPA STM p295*)
- At each visit — ask about physical activity, sleeping and shortness of breath (dyspnoea)
- If signs or symptoms of heart failure (*CARPA STM p264*) or problem that could cause heart failure (eg anaemia, infection, high BP) — **medical consult** straight away
- Always plan for birth in hospital

Prevention of endocarditis

- 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 before invasive, surgical or dental procedures (*CARPA STM p298*)
 - Always do **medical/dental consult**
- If miscarriage —
 - Give **amoxicillin** oral single dose 1 hour before D&C – adult 2g
 - *OR amoxi/ampicillin* IV single dose just before D&C – adult 2g
 - Max rate 100mg/mL/min
 - If anaphylaxis to penicillin — give **vancomycin** IV single dose – adult 15mg/kg/dose (doses *p378*)
 - Slow infusion (at least 1 hour) that ends just before procedure
- If premature rupture of membranes (*p29*), prolonged labour —
 - Give **amoxi/ampicillin** IV single dose – adult 2g
 - Max rate 100mg/mL/min
 - If anaphylaxis to penicillin — **medical consult** about **vancomycin** IV single dose – adult 15mg/kg/dose (doses *p378*)
 - Slow infusion — at least 1 hour

Unplanned labour or birth in community

- **Medical consult**, send to hospital
 - Put in IV cannula (*CPM p84*). **Medical consult** before giving IV fluids — too much can cause heart failure
 - Record fluid balance during labour, after birth
 - See *Labour and birth (p158)*
 - Watch woman closely. If severe heart disease — can become unwell quickly
 - **Do not** give ergometrine alone or in combination after birth. Only use plain oxytocin
- If woman becomes short of breath —
 - Sit upright
 - Give **oxygen** to target O₂ sats 94–98% *OR* if moderate/severe COPD 88–92%
 - Nasal cannula 2–4L/min *OR* mask 5–10L/min
 - **Medical consult**



Thromboembolism (blood clots) in pregnancy and postnatal

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

Risk factors include

- Pregnancy — can happen before, during or after birth
- Previous DVT or PE
- Known condition with increased tendency to clot (thrombophilia) or family history of clots at a young age
- Obesity (BMI more than 30)
- Age more than 35 years
- Recent surgical procedure — Caesarean section, postpartum tubal ligation
- Poor mobility — lower limb injury, long distance travel
- Pre-eclampsia ([p21](#))
- Current infection (eg UTI)
- Smoking

Ask

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

Check

- If woman has multiple risk factors (*above*) or single strong risk factor (previous DVT or PE, thrombophilia) — **medical consult**
 - May need referral to obstetrician and physician as soon as possible
 - May need treatment to prevent clots (prophylaxis) in this pregnancy
- For all pregnant women, look for symptoms of DVT or PE at every antenatal and postnatal visit — see Table 3.8

Table 3.8: Symptoms of thromboembolism (DVT or PE)

Deep vein thrombosis (DVT)	Pulmonary embolus (PE)
<ul style="list-style-type: none"> • Usually swelling in 1 leg, but can be in both • May have pain in calf, lower abdomen, groin • Affected leg may be warm, red or tender 	<ul style="list-style-type: none"> • Breathlessness • May be low grade fever • Fast pulse, fast breathing • Feeling faint, fainting • May have sudden onset of chest pain, coughing, coughing up blood, collapse

Do

- If you suspect DVT or PE — **medical consult** straight away
 - Need to send to hospital to confirm diagnosis and start treatment
 - Incorrect blood thinning treatment (anticoagulation) can lead to bleeding complications
- Treatment during pregnancy
 - Usually low molecular weight heparin (eg enoxaparin) subcut injections
 - *OR* warfarin tablets
- Treatment needs to continue for 3–6 months after birth
 - May need to encourage woman to continue treatment for whole time
- All women with DVT or PE in current or previous pregnancies must plan to have baby in hospital

While waiting for evacuation

- Continue regular observations
- **Do not** lie woman flat on her back. Sitting upright may be best
- Give **oxygen** to target O₂ sats 94–98% *OR* if moderate/severe COPD 88–92%
 - Nasal cannula 2–4L/min *OR* mask 5–10L/min
- Put in IV cannula (*CPM p84*)
 - Flush with **normal saline** 5mL every 4 hours
- Give other treatment as directed by doctor (eg pain relief, medicine to stop clots)
- Reassure woman, keep her calm. Have someone stay with her if possible

Follow-up after birth

- Emphasise importance of continuing treatment for whole time advised by doctor
- Reassure her that breastfeeding is not affected by anticoagulation medicines
- **Do not** give combined oral contraceptive pill to woman with history of DVT or PE
 - Other hormonal contraception may be suitable but **medical consult** first

Epilepsy in pregnancy

If woman fitting now —

- If more than 20 weeks pregnant — see *Fits in the second half of pregnancy* (p19) straight away
- If less than 20 weeks pregnant — see *Fits — seizures* (CARPA STM p57)

- Epilepsy is the most common neurological problem in pregnancy

Remember: Always consider eclampsia 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 of using antiepileptic medicines during pregnancy
- Risks need to be balanced against the effects of uncontrolled fits on both mother and baby

- Adverse effects of antiepileptic medicines
 - Valproate associated with highest risk of congenital malformation and long-term developmental problems
 - Phenytoin, carbamazepine, phenobarbital associated with specific congenital abnormalities
 - Newer antiepileptics (eg lamotrigine, levetiracetam, gabapentin) have not yet been associated with significant harmful effects on the fetus
- Change in seizure frequency
 - About 1/3 of women with epilepsy have more fits while pregnant
 - Women who had fits in the year before getting pregnant at 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 not controlled — higher risk of illness and death for woman

Do

Woman not yet pregnant

- Talk about importance of reliable contraception
 - If taking enzyme-inducing antiepileptics (p141) —
 - IUDs or Depo injection best methods
 - ENG-implant and progestogen-only pill not recommended
 - If emergency contraception needed — give double dose of ECP OR use copper IUD
 - If not taking enzyme-inducing antiepileptics — all methods effective
 - If woman using lamotrigine and oral contraceptives — specialist advice

Woman planning pregnancy

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

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 ([p105](#))
- Refer to physician and neurologist for joint management plan. May need
 - Monthly monitoring of medicine levels
 - Serial ultrasounds for fetal growth
- Talk with woman about antenatal screening tests for baby ([p103](#)). 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
- If taking enzyme-inducing antiepileptics (*below*) — give **vitamin K** oral once a day for last 4 weeks of pregnancy (from 36 weeks) – 20mg
- 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**

Enzyme-inducing antiepileptics — phenobarbital, phenytoin, carbamazepine, primidone, topiramate, oxcarbazepine, felbamate.

Unplanned birth in community

- **Medical consult**, send mother and baby to hospital with escort
- Put in IV cannula ([CPM p84](#)), largest possible
- 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* ([CARPA STM p57](#))
- If woman taking enzyme-inducing antiepileptics has not been taking oral vitamin K — give **vitamin K** IM/subcut – 10mg



- See *Labour and birth* (p158)
- Watch baby closely for breathing problems — especially if mother taking phenobarbital or primidone, they 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)

Breastfeeding

- Encourage breastfeeding
 - Antiepileptics pass into breast milk, but benefits of breastfeeding outweigh 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
- **Medical consult** to plan monitoring of levels and dose adjustment

Kidney disease in pregnancy

- If woman with CKD planning pregnancy
 - See *Chronic kidney disease (CARPA STM p244)*
 - **Medical consult** about
 - Stopping ACE inhibitor or ARB — both contraindicated in pregnancy
 - Starting safer medicine (eg methyldopa, labetalol)
 - CKD lowers fertility, makes it harder to get pregnant. See *Infertility (p309)*
- If woman with CKD pregnant
 - Increased risk of perinatal death, preterm birth, poor growth of baby
 - Risks get higher as kidney disease and high BP get worse
 - Increased risk of pre-eclampsia ([p21](#))
 - CKD often gets worse during pregnancy

Check

- Add to routine antenatal tests ([p86](#))
 - Take bloods for UEC, LFT
 - Urine ACR
- May need extra tests to check baby (eg more obstetric ultrasounds)
- If renal ultrasound needed — arrange at same time as 18–20 week obstetric morphology ultrasound. Fill out separate request form

Do

- Stop ACE inhibitor or ARB straight away — both contraindicated in pregnancy
 - **Medical consult** about starting safer medicine (eg methyldopa, labetalol)
- Refer to kidney specialist

Antenatal care

Plan care with kidney specialist and obstetrician.

- Management plan must include guidelines for
 - BP. If not controlled — **medical consult**
 - UTIs ([p149](#))
 - Anaemia ([p132](#))
 - How often to do blood and urine tests
- Watch closely for signs or symptoms of pre-eclampsia ([p21](#))
 - Increased protein in urine
 - Poor BP control ([p127](#))
- If concerns at any time — **medical consult**

Hepatitis in pregnancy

- Mothers with hepatitis B or hepatitis C can breastfeed their babies
 - If cracked or bleeding nipples — advise to express and discard milk until bleeding areas healed
 - Get advice from someone experienced — CDC/PHU, lactation consultant

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 (CARPA STM p368)*
 - 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

If woman HBsAg positive

- Risk of transmission to baby can be reduced — see Table 3.9

Table 3.9: Risk of transmission of hepatitis B to baby

Mother's viral load	Intervention	Risk of transmission
High more than 10^7 (10 million) international units/mL	• None	90%
	• Baby has hepatitis B immunoglobulin and hepatitis B immunisation at birth	8–10%
	• Mother given antiviral treatment • <i>AND</i> 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%

Check

- Take blood for
 - 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 are done ([p86](#))

Do

- **Urgent specialist consult** (doctor should phone specialist for advice) if
 - Hepatitis B viral load more than 10^7 (10 million) international units/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
- Otherwise manage as hepatitis B in non-pregnant women ([CARPA STM p363](#))
 - Talk with woman about not 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
- Caesarean section doesn't reduce risk of baby being infected any more than giving immunoglobulin and immunisation to baby 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 site with warm water and dry thoroughly before giving baby IM injection
- Test at 9–18 months to check if infected during birth
 - Take blood for HBsAg, anti-HBc, anti-HBs

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

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



Hepatitis C

Testing for hepatitis C

- Offer testing for hepatitis C (anti-HCV) at first antenatal visit
 - If anti-HCV positive — 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

Risk factors for hepatitis C

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

If woman hepatitis C RNA positive

Check

- Check hepatitis A and hepatitis B status. If not immune — offer immunisation
- Take blood for LFT, FBC, INR, UEC
- At beginning of pregnancy take blood for HCV viral load, genotype testing

Do

- If signs of advanced liver disease (*CARPA STM p367*) — **medical consult**, 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 infected during birth
- Advise staff involved in birth of hepatitis C status — can modify practices to protect baby
 - Fetal 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 site with warm water and dry thoroughly before giving baby IM injection
- 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

Group B Streptococcus

Group B Streptococcus (GBS) bacteria found in rectum, vagina, urinary tract of healthy women. Asymptomatic, only detected by screening tests.

Problems

- If GBS present in vagina during labour and birth — baby at risk of infection
 - Infection in babies serious, can cause pneumonia, meningitis, sepsis
 - Leading cause of sickness and death in newborn babies
 - Preterm babies most at risk

Do

At first antenatal visit

- Check file notes, ask woman if previous baby infected with GBS

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

GBS swab

- Take combined vaginal and anal swab at 35–37 weeks pregnant
 - Can be self-collected by woman ([p266](#))
- 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

GBS positive urine

- If GBS positive urine — must treat
 - Give **amoxicillin** oral 3 times a day (tds) for 3 days – adult 250mg
 - See *Urine problems in pregnancy* ([p149](#)) for follow-up
- If GBS positive at any point in pregnancy — will need antibiotics in labour

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 —
 - Transfer mother and baby after birth
 - See *Newborn needing special care* ([p76](#))
- 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



- Prolonged rupture of membranes — more than 18 hours or unknown time since membranes ruptured
- Give **benzylpenicillin** IV single dose straight away – adult 3g
- *THEN* **benzylpenicillin** IV every 4 hours until birth – adult 1.2g
 - If allergic to penicillin — **medical consult**
- Stop treatment immediately after birth
- **If unwell** — see *Intrauterine infection (chorioamnionitis)* (p31)
 - T above 38°C
 - Pulse more than 100 beats/min
 - Check woman's pulse with pulse oximeter at same time as baby's heart rate using doppler to tell the difference between the two
 - Baby's heart rate more than 160 beats/min
 - Tender uterus
 - Smelly vaginal discharge or pus

Urine problems in pregnancy

- Urine problems include
 - Bladder infection — lower UTI
 - Asymptomatic bacteriuria — no symptoms. Diagnosed by testing urine
 - Cystitis with symptoms
 - Kidney infection (pyelonephritis) — upper UTI
 - Also consider STI as cause of pain on passing urine, especially if 15–35 years. See *STI checks for women* (p238)

Problems

- Increased risk of preterm labour, low birth weight baby, perinatal death

Ask — at every antenatal visit

- About upper and lower UTI symptoms (*below*). Can have both at same time
- If lower abdominal pain — can be UTI, also see *Pelvic inflammatory disease* (p260)

Upper UTI symptoms

- Flank/loin pain — pain in back or side between ribs and pelvis
- Fever, shakes (rigors)
- Nausea, vomiting

Lower UTI symptoms

- Burning, discomfort, pain when passing urine (dysuria)
- Passing urine more often than usual (frequency)
- Lower abdominal pain
- Blood in urine (haematuria) (*CARPA STM p415*)

Check

First antenatal visit

- U/A — mid-stream urine
- Send urine for MC&S even if U/A normal

All other antenatal visits

- U/A — mid-stream urine
- Send urine for MC&S if
 - Previous UTI in this pregnancy
 - Nitrites or leukocytes on U/A
 - UTI symptoms
- If symptoms — also see *Abnormal vaginal discharge* (p253) or *STI checks for women* (p238)



Abnormal U/A can have other causes

- If blood or protein and no infection on MC&S — **medical consult**
- If protein —
 - See *Testing for kidney disease (CARPA STM p237)*
 - *OR* if second half of pregnancy — see *Severe pre-eclampsia (p21)*.

Medical consult

Do

- **Always** treat UTIs in pregnancy, including asymptomatic bacteriuria
- Repeat urine MC&S to confirm successful treatment
- If upper UTI symptoms — see *Kidney infections in pregnancy (p151)*
- If GBS positive on urine culture — always treat straight away
 - Give **amoxicillin** oral 3 times a day (tds) for 3 days – adult 250mg
 - If GBS positive at any point in pregnancy — will need antibiotics in labour (*p147*). Plan for hospital birth
- If lower UTI symptoms *OR* nitrites on U/A — give antibiotics straight away, **do not** wait for MC&S result
 - Give **cefalexin** oral twice a day (bd) for 5 days – adult 500mg
 - *OR* **nitrofurantoin** (**not** if eGFR less than 45) oral twice a day (bd) for 5 days – adult 100mg
- Encourage oral fluids

Note: Urinary alkalinisers may help relieve symptoms but don't treat infection.

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 infection — repeat antibiotics, **medical consult**
 - If frequency or pain on passing urine *OR* nitrites on U/A but no infection on MC&S — STI check (*p238*), **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

Preventive antibiotics

Medicine taken every day for rest of pregnancy to prevent UTIs.

- Give **cefalexin** oral once a day at night – adult 250mg

- If symptoms *OR* UTI diagnosed by screening test —
 - Stop preventive antibiotics, treat as acute infection
 - Restart preventive antibiotics as soon as acute treatment finished
 - Follow-up in usual way

Kidney infections (pyelonephritis) in pregnancy

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

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

Ask

- Fever — feeling hot then cold, may be shivering
- Nausea or vomiting
- One sided (flank/loin) pain
- Abdominal pain, contractions
- History of pyelonephritis, repeated UTIs
- Abnormality of urinary tract

Check file notes

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

Check

- Temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#))
- Baby's heart rate
- U/A — mid-stream urine
 - Usually but not always abnormal
 - Send urine for MC&S
- Abdomen — feel for
 - Tenderness, rebound, guarding. See *Abdominal assessment (CARPA STM p18)*
 - Loin (renal angle) tenderness
 - Contractions. If you feel contractions — see *First check in labour (p158)*

Do

- If you suspect pyelonephritis — **medical consult**, send to hospital
- Put in IV cannula ([CPM p84](#))
 - Take blood for FBC, UEC, blood cultures. Send in with woman
 - Start **normal saline** – 1L at 125mL/hr, or as directed by doctor



- If pain relief needed — give
 - **Paracetamol** up to 4 times a day (qid) — adult 1g (*CARPA STM p380*)
 - *OR* **paracetamol-codeine** oral up to 4 times a day (qid) — adult 500+30mg (*CARPA STM p381*)
- **Medical consult** about starting antibiotics
 - Usually **ceftriaxone** IV single dose — adult 1g
 - If unable to give IV — give IM mixed with 3.6mL **lidocaine (lignocaine) 1%**
- Continue observations until evacuation
 - Every 30 minutes — pulse, RR, BP
 - Every hour — temp, baby's heart rate

Follow-up

- Antibiotic treatment for total of 10–14 days. 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 (*p150*)

4 Labour and birth

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Introduction

In traditional Aboriginal culture, birthing is strictly the concern of women, and governed by Women's Law. Many older women, known as traditional birth assistants, have this knowledge — the 'Grandmother's Law'. 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* (p6) for where to find more information.

Traditional practices governed how the cord was managed, including cutting the cord after the placenta* 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. This can conflict with traditional practices of birthing on country. 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.

Unplanned 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. Birthing is still 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.

* Traditionally Aboriginal women call the placenta the birth bag.

Birth and resuscitation equipment

Birth

Birth pack (delivery/midwifery pack)

- Sterile lubricant
- Sterile sharp curved blunt-ended scissors for episiotomy
- 2 sterile metal clamps with ratchets and grazed ends for clamping cord
- Sterile blunt-ended scissors for cutting cord
- Urinary catheter equipment
- Small combine dressings
- Kidney dish for placenta
- Sponge holding forceps for membranes
- Suture materials ([CPM p292](#))
- Equipment for taking cord blood
 - Kidney dish
 - Syringe
 - EDTA or plain specimen tube

General equipment

- Personal protective equipment (PPE)
- Lots of blueys, spare sheets
- Good light

Medicines

- Oxytocin 10 international units/mL x 5 ampoules, 2mL syringe, 23G needle
- Lidocaine (lignocaine) 1% x 5 ampoules
- Nitrous oxide + oxygen cylinder

Emergency equipment

- Sterile Sims' speculum ([p47](#)) x 2 (breech birth, removing cervical suture/tape)
- Sterile sponge forceps (removing cervical suture/tape)
- Sterile long-handled scissors — at least 15cm (removing cervical suture/tape)

After the birth

- Wraps for baby — see *Keeping baby warm after birth* ([p182](#))
- Laminated copy of APGAR chart
- 2 plastic cord clamps, and 2 spares in case first break
- Name bands for baby x 4
- Plastic bucket with lid or plastic bags for placenta — family may take it
- Thermometer, under arm (axillary)
- Paediatric vitamin K 2mg/0.2mL, 1mL syringe, 25G needle
- Birth registration forms

General equipment — mother and baby

- BP machine, stethoscope, thermometer
- Fetal heart doppler, pinard stethoscope
- Clock with second hand
- Blood specimen tubes — EDTA, plain
- Syringes 1mL, 2mL, 5mL, 10mL x 5 each and needles 19–26G
- Normal saline, tourniquet, tape
- IV cannula — 14–24G
- IV giving sets (blood/fluid pump sets), bungs, extension tubing, dressings
- IO needle device, IO needles, 15mm (baby), 25mm (adult), 45mm (obese)
- Nasogastric tubes 5Fr, 6Fr, 8Fr

Resuscitation — mother

- Oxygen/medical air with flow meter (flow rates up to 10L/min)
- Emergency trolley

Resuscitation — newborn

- Laminated copy of newborn resuscitation flowchart

Warmth

- Warm towels and baby wraps, space blanket

Airway and breathing equipment

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

Suction

- 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, 4.5mm, tape for securing
- Stylette or introducer

Medicines — under medical advice

- Adrenaline (epinephrine) 1:10,000 (0.1mg/mL)
- Normal saline 30mL
- Glucose 5% and glucose 10%, 500mL
- Water for injection 5mL

Labour and birth

For women presenting unexpectedly in labour to primary health care centre.

- More likely to
 - Be early birth (preterm labour)
 - Have had little or no antenatal care
 - Have declined transfer to regional centre to wait for birth

If woman arrives pushing and birth about to happen — see *Getting ready to birth baby* straight away ([p161](#)).

Labour

- **Labour pains** are caused by tightening of uterus (contractions)
 - Between contractions uterus is relaxed
 - During contractions 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 regular, painful contractions — usually lasting 1 minute every 2–5 minutes
- **Waters have broken** (membranes ruptured) when clear fluid (liquor) loss from vagina. Doesn't always mean birth will happen soon
 - Check colour of liquor (waters). Can be
 - Clear — 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* straight away ([p42](#))
 - If bottom or feet seen — see *Breech birth* ([p47](#))

First stage of labour

From start of labour until cervix fully dilated.

First check in labour

Check as much as you have time to

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

- **Ask**
 - Is there more than 1 baby
 - Is baby moving
 - Have movements gotten less over 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
 - How strong — mild, moderate, strong
 - Membranes intact or ruptured
 - If fluid loss — when did it start, how much, colour, smell, blood or mucus
 - If urge to push — can you see baby
- **Obstetric history**
 - When baby is 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, bleeding after birth (postpartum haemorrhage)
- **Medical history**
 - Medicines, allergies, substance use
 - Bleeding disorders, diabetes, heart disease, kidney disease, high BP

If woman less than 37 weeks pregnant — see *Preterm labour* (p26).

Check

- Baby's heart rate. Use doppler if available
 - Straight after a contraction measure for at least 1 minute
 - Repeat every 15 minutes
- Woman's observations
 - Repeat pulse hourly
 - Check temp and BP every 4 hours
 - If any observations abnormal — repeat in 30 minutes
- Contractions
 - Over 10 minutes — how often, how long, how strong
 - Repeat every 30 minutes
- Vaginal fluid loss — colour of liquor, blood loss
- Every 2 hours — ask woman to try to pass urine, do U/A
- Every 2–4 hours — palpate baby (p99), check that head (or presenting part) is moving down into pelvis



Normal observations

- Temp — 37.5°C or less
 - If more than 37.5°C — see *Group B Streptococcus* (p147)
- Pulse — less than 100 beats/min
- BP — less than 140/90mmHg
 - If high BP — **medical consult**
- U/A — no more than trace of ketones or protein
 - Blood and leucocytes common but need **medical consult**
- Vaginal fluid loss — clear or pink
- Uterus — soft and no pain between contractions
- Contractions — become stronger, last longer, closer together
- Baby's head (or presenting part) — continues to move down into pelvis
- Baby's heart rate — 110–160 beats/min
 - If heart rate not normal — see *Fetal distress in labour* (p40)

Do

- **Medical consult** to talk about
 - Stopping labour (p32)
 - Sending to hospital
 - Pain relief — consider
 - Natural methods — breathing, relaxation, massage
 - Medicines — nitrous oxide, opioids
 - Oxytocin for delivery of placenta, and if bleeding after birth
- **Put clean pad between woman's legs and monitor loss**
 - Small amount of blood and mucus ('show') normal
 - If more than 50mL vaginal bleeding — see *Bleeding in pregnancy* (p14)
 - If green or brown vaginal fluid loss (meconium-stained liquor) — see *Fetal distress in labour* (p40)
- **Let woman be in any position that makes her comfortable**
 - Upright positions help labour/birth more than lying on back — F 4.1 for examples
 - If woman wants to lie down — encourage her to use wedge to tilt her to left side
- **If birth to progress** — put in 1 or if possible 2 **IV cannula as soon as you can** (16–18G) (*CPM p84*)
 - Birth is natural and not usually dangerous, but in remote clinic you need to be ready in case something goes wrong

- If baby's heart rate less than 110 beats/min or more than 160 beats/min — baby may be distressed
 - Change woman's position. If lying on back — tilt to left side or sit up
 - **Midwife/obstetrician consult**, see *Fetal distress in labour* (p40)



4.1

Second stage of labour

From cervix fully dilated until birth of baby.

Getting ready to birth baby

Do first

- Get help — don't leave woman alone
- Have helper collect equipment ([p156](#))
- If you have incubator — turn it on, needs time to heat up

Check

- When pushing — check baby's heart rate during and after every contraction, for at least 1 minute
 - Take woman's pulse to be sure you are not listening to her heartbeat
- Check BP hourly
 - If not normal — repeat in 30 minutes

Do

- **Put in 1 or if possible 2 IV cannula as soon as you can (16–18G), if not already in place ([CPM p84](#))**

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** — F 4.1 for examples (*above*)
 - If she chooses to lie down — encourage her to lie on her left side or use wedge to tilt her to the left
 - Lying flat on her back can be dangerous for mother and baby

Be aware: Woman may pass faeces when straining to push. Normal, but can be embarrassing for her. Gently remove, wiping away from baby.

In normal birth

- Baby will
 - Arrive (present) head first, usually with face toward mother's back
 - If bottom or feet first — see *Breech birth* (p47)
 - If cord first — see *Cord prolapse* straight away (p42)
 - Have heart rate during labour of 110–160 beats/min
 - Be bluish at birth, but become 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

Do

- Put clean sheet under woman
- Use small combines to clean any 'show' or faeces from perineum. Wipe from front to back, then throw in bin
- Open and set up birthing pack
- Put on goggles and sterile gloves
- Check baby's heart rate between contractions
 - Talk calmly. Say things like "You are letting this baby out so well, everything's stretching nicely", "That's great, let the baby out slowly"

Birth of baby's head and shoulders

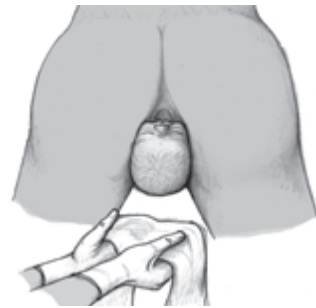
- Let birth of head happen slowly on its own
 - On all fours — F 4.2, F 4.3, F 4.4
 - On back — F 4.5, F 4.6, F 4.7



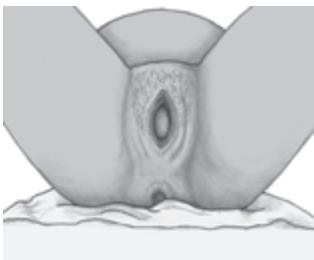
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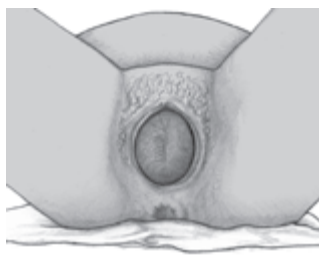
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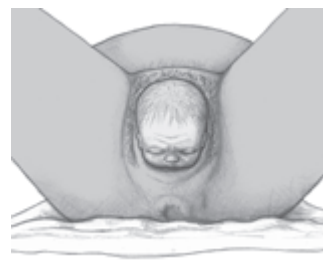
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4.5

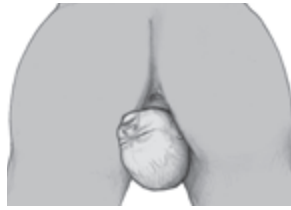


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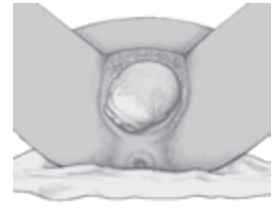


4.7

- 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 — F 4.8, F 4.9
- As woman pushes with contraction, shoulders should deliver
- Shoulder under pubic bone (anterior) comes out first



4.8

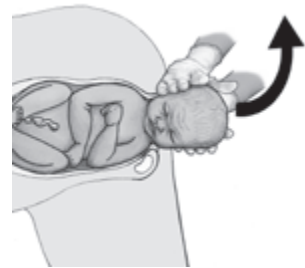


4.9

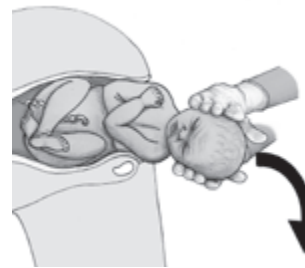
If shoulder doesn't come out easily

If woman birthing on all fours

- Wait for next contraction. Holding baby's head between palms of your hands, gently lift up toward ceiling to release anterior shoulder — F 4.10
- When shoulder comes out from under pubic bone, ask woman to stop pushing. Gently guide baby downward toward bed/floor — F 4.11
- Other shoulder should now appear — F 4.11



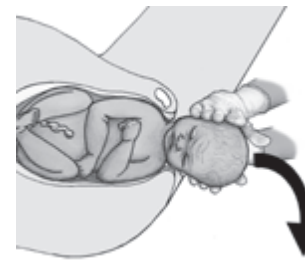
4.10



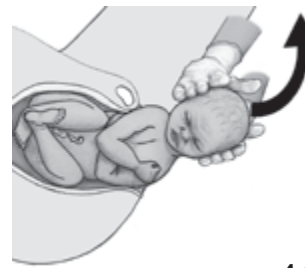
4.11

If woman birthing on her back

- Wait for next contraction. Holding baby's head between palms of your hands, gently pull down toward bed to release anterior shoulder — F 4.12
- When shoulder comes out from under pubic bone, ask woman to stop pushing. Gently lift baby upward toward ceiling — F 4.13
- Other shoulder should now appear — F 4.13



4.12



4.13

If shoulders still stuck — see *Stuck shoulder (shoulder dystocia)* straight away (p44).

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

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 *Birth of twins* (p53)
- Give **oxytocin** IM in thigh – 10 international units
 - Placenta should separate within a few minutes
 - If oxytocin not used —
 - Separation may take longer
 - Increased risk of bleeding after birth (postpartum haemorrhage)
- 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, remove wet towel. Cover baby with warm dry towel, make sure head is covered
- Do 'rapid assessment' of baby's condition
 - Breathing or crying
 - Muscle tone
 - Heart rate

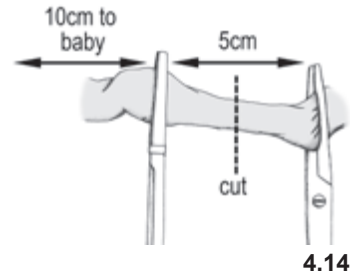
If baby floppy and/or not breathing properly and/or heart rate less than 100 beats/min — see *Newborn resuscitation* straight away (p70).

- If baby breathing, good muscle tone, heart rate more than 100 beats/min — leave in skin-to-skin contact with mother if possible
 - *OR* if baby needs extra care — give to helper, see *Newborn needing special care* (p76)
 - *OR* if mother tired or unwell — give baby to family member
- Check heart rate, RR, tone, response to stimulation, colour at 1 minute for APGAR score (p180)
- Have helper
 - See *Keeping baby warm after birth* (p182)
 - Watch baby closely over next few minutes for signs of respiratory distress
 - Check APGAR score again at 5 minutes (p180)
 - If less than at 1 minute — see *Newborn resuscitation* straight away (p70)
 - Encourage early breastfeeding — helps placenta separate from uterus, uterus to contract after placenta delivered

- See *Care of normal newborn for first 24 hours* for ongoing care ([p184](#))

Clamp and cut cord

- 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 — F 4.14
- 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
 - Reclamp
 - Use syringe to draw up 10mL of cord blood, put into labelled EDTA or plain specimen tube
- **If taking after placenta delivered** —
 - Draw 10mL of blood from one placenta blood vessel with needle and syringe, put into labelled EDTA or plain specimen tube

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 under 500mL (2 cups), but can seem like a lot of blood
- Deliver placenta
 - If oxytocin given — see *Delivering placenta with controlled cord traction* ([p166](#))
 - If oxytocin not given — see *Delivering placenta by maternal effort* ([p167](#))
- Check for tears of birth canal ([p173](#))
- STI check
 - Syphilis serology
 - If STI status not known — do pregnancy STI check ([p241](#))
- Check that blood and swabs for all other routine tests have been collected

Delivering placenta with controlled cord traction

- Only apply cord traction if
 - Counter traction being applied above pubic bone
 - Well contracted uterus
- If traction applied to cord without uterus contracted — increased risk of uterine inversion
- If any suggestion of cord tearing, or uterus relaxes — ease off or stop traction

Do not

- **Do not** do controlled cord traction if no **oxytocin** available or woman refuses it
 - See *Delivering placenta by maternal effort* (p167)

Do

- Woman lying or half sitting on bed, with kidney dish between her legs
- Check **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 — F 4.15, 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 — F 4.15
 - If cord goes back in when you push on uterus — placenta hasn't separated properly. Wait a few minutes before trying again
- Apply **gentle** traction (pull) on cord — down toward bed
 - **Do not** apply cord traction without applying counter traction — F 4.15
 - **Do not** apply cord traction unless uterus well contracted
- **Stop** traction if
 - Any suggestion of cord tearing
 - Uterus relaxes — increased risk of uterine inversion
 - No lengthening of cord
 - Wait a few minutes for placenta to separate then try again
 - If only small amount of bleeding — no hurry
- 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



4.15

- Keep turning slowly while maintaining gentle traction until whole placenta and membranes are out
- Put placenta in kidney dish
- Straight after placenta delivered, check top of uterus (fundus). Usually found at level of umbilicus. Should be firm like a grapefruit
 - If soft — see *Rubbing up a contraction* (p168)
- Check how much bleeding
- Check placenta quickly to see if there are any pieces missing, put aside to check again later (p169)
- Record time placenta delivered

- If placenta not delivered after following these steps — **medical consult**
- If placenta still not delivered 30 minutes after birth — see *Retained placenta* (p178)
- If bleeding — see *Primary postpartum haemorrhage* (p58)

Delivering placenta by maternal effort

If no oxytocin available or woman refuses to have injection.

- Do nothing — let placenta be delivered by mother's effort only
- **Do not** pull on cord at any stage. May cause more bleeding

Do

- Encourage breastfeeding as soon as possible after birth. Releases natural hormone (oxytocin) that causes uterus to contract
- **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 or squatting position or sitting on toilet or pan, where gravity will help
- As placenta delivers, collect in kidney dish
- Straight after placenta delivered, check top of uterus (fundus). Usually found at level of umbilicus. Should be firm like a grapefruit
 - If soft — see *Rubbing up a contraction* (p168)
- Check how much woman is bleeding
- Check placenta quickly to see if there are any pieces missing, put aside to check again later (p169)
- Record time placenta delivered

- If placenta not delivered 30 minutes after birth — **medical consult**, treat as retained placenta (p178)
- If bleeding — see *Primary postpartum haemorrhage* (p58)



Finally

- See *Care of mother — first 24 hours after the birth* (p171)
- Record in file notes
 - Date and time of birth
 - Time of delivery of placenta
 - How much blood woman lost
 - What you did, any problems you had, etc
 - Any medicines, immunisations given to mother and/or baby
 - Whether placenta and membranes complete or incomplete
 - APGAR scores (p180) — 1 minute and 5 minutes after birth
- Complete birth registration forms (p187)
- Don't forget to celebrate and debrief
- If challenged or distressed by anything you saw or did — talk with
 - Friends, colleagues, qualified counsellor
 - Bush Support Services on 1800 805 391

Rubbing up a contraction

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

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

- Gently feel top of uterus (fundus) after delivery of placenta and every 15 minutes for first hour. Should be hard and size of a grapefruit
 - Warn woman as top of uterus (fundus) very tender after birth
- 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 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 (p281)

Do

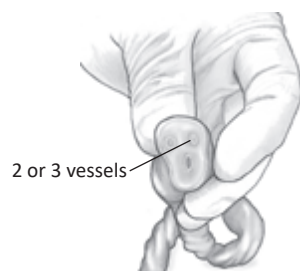
- Using one hand, firmly but gently rub top of uterus (fundus)
- **Keep doing this until uterus becomes firm.** Will feel like a hard grapefruit or tennis ball under your hand
- **If uterus stays relaxed,** feels spongy and bulky —
 - Woman may keep trickling or gushing blood
 - Call for help
 - See *Primary postpartum haemorrhage* (p58)

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 — uterus can't contract completely, can cause significant bleeding (postpartum haemorrhage)
- If woman going to hospital — send placenta with her
 - Make sure it is labelled
 - Double bag then put in pathology transport container with ice brick
- Placenta may have cultural or personal significance so family may want to take it home. If not sending to hospital/pathology — **do not** dispose of it until you have asked them

Check

- If woman less than 37 weeks pregnant or showing signs of infection (eg fever or pus/discharge on membranes) —
 - Take swabs from fetal and maternal sides of membranes, send for MC&S
 - Send placenta to pathology, even if woman not going to hospital
- If abnormalities in the placenta, or complications in the pregnancy — placenta may need to be sent for histopathology. **Medical consult**



4.16

Do

- Look at cut cord.
 - Usually 3 blood vessels — F 4.16
 - If only 2 blood vessels — this can be associated with kidney, heart and other abnormalities. Medical review for baby
- Put placenta on table with fetal (cord) side up. Should be smooth and shiny — F 4.17
- Hold placenta up by cord and check membranes are intact — F 4.18
 - 2 layers of membranes
 - Membrane on fetal side (amnion) is easy to tear
 - Membrane on maternal side (chorion) is a bit tougher and thicker
 - Note any holes, tears, ragged edges, or missing membrane — F 4.19



4.17



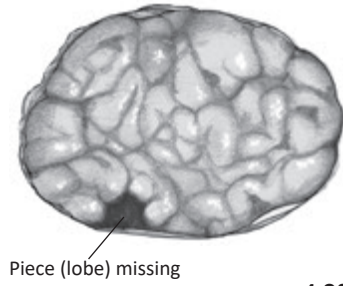
4.18



4.19

Checking the placenta

- Lay placenta flat on table with maternal side up
 - check it is complete
 - Note if any pieces of placenta missing — F 4.20



4.20

Care of mother — first 24 hours after birth

- If total blood loss 500mL (2 cups) or more, or if woman shows signs of shock — see *Primary postpartum haemorrhage* (p58)
- For ongoing care after first 24 hours — see *Postnatal care of mother* (p195)

Signs of shock

- Restless, confused, drowsy, unconscious
- Pale, cool, moist skin
- Fast breathing
- Pulse fast (more than 100 beats/min) or difficult to feel
- Low BP (systolic less than 100mmHg)
- Capillary refill longer than 2 seconds

Check

- Uterus contracted, vaginal blood loss, pulse
 - Every 15 minutes for 1 hour, then hourly for 4 hours
 - If uterus contracted — top of uterus (fundus) will be firm, central, at level of umbilicus
 - Slow continuous trickle of blood can result in large loss. If this is happening — see *Primary postpartum haemorrhage* (p58)
- Temp, RR, BP — hourly for 4 hours

Blood tests

- If no antenatal care — **medical consult**
 - Take blood as for first antenatal visit. See *Antenatal checklist* (p86)
- FBC (best done 24 hours after birth), syphilis serology
- 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 test — within 2 hours of birth and before giving RhD-Ig

Do in first hour

- If mother comfortable — put baby on her chest, encourage skin-to-skin contact and breastfeeding (p199). Offer help if needed
- Offer woman something to eat and drink, shower, change of clothes
- Encourage woman to pass urine
 - Full bladder can stop uterus contracting and cause heavy bleeding
- Make sure placenta checked and is complete (p169)



- **Medical consult** about birth. Make sure you know mother's medical and obstetric history. Talk about
 - Labour, birth, condition of mother and baby
 - Problems with woman, baby, placenta
 - Need to send to hospital
 - If sending — send with woman, placenta, birth documents, bloods, birth registration and family assistance forms

Do

- Fill in forms for birth registration ([p187](#)), family assistance, perinatal statistics
- 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
- **Talk with woman about**
 - Emptying bladder regularly to lessen risk of heavy bleeding
 - Perineal hygiene and healing — changing pads often, shower at least once and preferably several times a day
 - If perineal tear — use ice pack inside pad to help decrease pain and swelling in first 24 hours. On for 20 minutes, off for 20 minutes
 - Normal blood loss, how to feel top of her uterus, how to massage it to make it hard if she has heavy bleeding
 - If heavy bleeding — someone to notify clinic staff as soon as possible
 - 'After birth' pains — crampy abdominal pains, often worse when breastfeeding. Use as needed for pain relief
 - **Paracetamol** up to 4 times a day (qid) – adult 1g ([CARPA STM p380](#))
 - **OR paracetamol-codeine** oral up to 4 times a day (qid) – adult 500+30mg ([CARPA STM p381](#))
 - Symptoms of thromboembolism (clots) — DVT or PE ([p138](#))
 - Breastfeeding ([p199](#))
 - Arrangements for follow-up/ongoing care, including contraception ([p335](#))

Tears of the birth canal

Common after birth. Can be tear of perineum, vagina, vulva, or cervix. Always check carefully for tears, especially if heavy blood loss.

- Tears more likely to happen if
 - Quick birth
 - Large baby
- If bright blood loss, placenta delivered, uterus firm and well contracted —
 - Look at vaginal area for tear
 - If heavy bleeding but can't see bleeding tear — suspect cervical tear

If heavy bleeding at any time — see *Rubbing up a contraction* (p168), *Primary postpartum haemorrhage* (p58).

Types of tears

Table 4.1: Tears of the birth canal

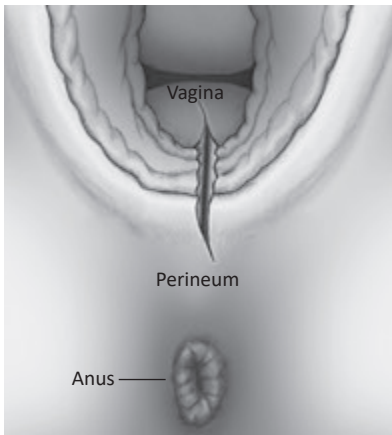
Classification	Type of damage	Repair needed
Graze or 1st degree tear — F 4.21	Tear involves skin and subcutaneous tissue of perineum and vaginal epithelium only	Usually doesn't need repair. Apply pressure to stop bleeding
2nd degree tear — F 4.22	Tear extends into fascia and muscle of perineum but anal sphincter remains intact	Should be repaired. Can be done in community, if trained
3rd degree tear — F 4.23	Tear extends into anal sphincter	Needs to be repaired in hospital by specialist
4th degree tear — F 4.24	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

Check

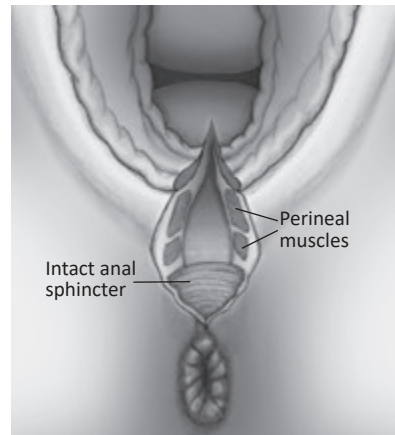
- Woman often very sore, embarrassed about this examination. Be gentle, careful, sensitive
- Reassure woman, offer **nitrous oxide** if available for pain relief and to help her relax
- Position woman lying down, bottom at edge of bed, knees bent up, feet supported
- Use good light, positioned properly



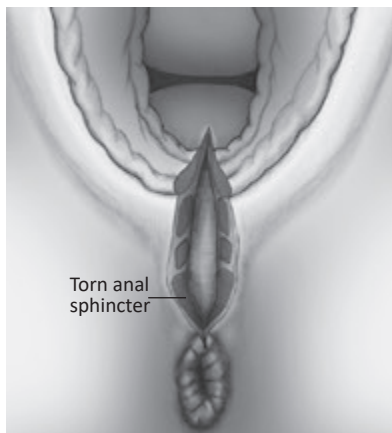
- Put on sterile gloves
- Mop up blood in vagina entrance with sterile gauze swabs
- Check perineum, vulva, urethra, labia, clitoris
 - Separate labia and look at vaginal opening
 - Wrap sterile gauze around fingers, use to **gently** separate walls of vagina
 - If tear/bleeding high up in vagina or hard to see — may need sterile speculum exam
- Check for 3rd or 4th degree tear — put gloved index finger into rectum, 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



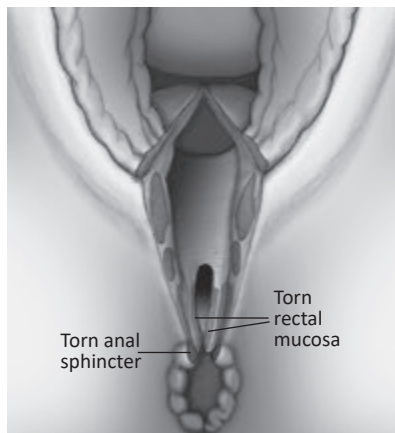
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4.22



4.23



4.24

Do not

- **Do not** suture tear or episiotomy unless trained

Do

Repairing tear properly will control bleeding. Start as soon as possible.

- **Superficial graze** — common, don't need to be sutured. Sting when passing urine. Advise to drink plenty of water and use urinary alkaliniser
- **1st degree tear not bleeding** — treat as for superficial graze
- **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* ([p176](#))
 - If not confident about doing repair —
 - Control bleeding
 - **Medical consult**, send to hospital
- **3rd or 4th degree tear** — **medical consult**, send to hospital for repair by specialist
- If woman being sent to hospital —
 - Ice pack to perineum for pain relief, 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, 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 continues — put in IV cannula ([CPM p84](#)), largest possible
 - Start **normal saline** 1L at 125mL/hour
 - **Medical consult** about whether antibiotics needed
 - If woman unable to pass urine — put in indwelling urinary catheter ([p281](#))
 - Reassure woman and family. Encourage her to hold and breastfeed baby unless feeling very unwell
 - Do routine observations every 30 minutes until evacuation

Remember: Keep checking uterus is firmly contracted.

Repairing tear or episiotomy

Attention

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

- Put on sterile gloves and gently examine vaginal/perineal tear
- 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
 - **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
- If LA given to do episiotomy — make sure area is still anaesthetised before doing repair. Give more if needed — lidocaine (lignocaine) 3mg/kg up to 200mg (20mL) in total
- Repairing tear or episiotomy is an aseptic technique

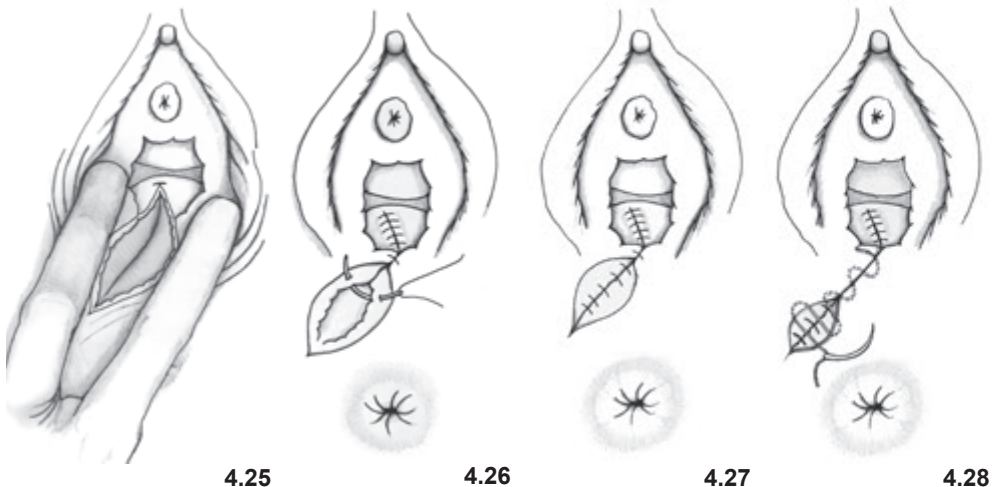
What you need

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

What you do

- Position woman so she is comfortable and you can see tear clearly
 - Good lighting essential
- Lay out dressing pack and equipment
- Put on apron and glasses
- Wash hands, put on sterile gloves
- Count gauze squares, packs, needles — record count in file notes

- Clean site with **chlorhexidine solution**
- Drape site with sterile towels/drape
- Inject **lidocaine (lignocaine) 1%** into whole site if needed — 10mL usually enough, but can use up to 20mL over 1 hour
 - Wait a few minutes, check area anaesthetised properly
- Check wound again. **If tear too big for you to repair — stop now**
 - Control bleeding ([p176](#))
 - **Medical consult**, send to hospital
- May need to insert 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 — F 4.25
- **Use these sutures** — **do not** pull stitches too tight as area can swell and cause a lot of pain
 - In vagina — continuous non-locking stitch — F 4.26
 - In muscle layer — interrupted or continuous non-locking stitch — F 4.27
 - In skin of perineum — continuous subcuticular stitch — F 4.28



- **If vaginal pack/combine used while suturing — take out**
- Inspect repaired vagina to make sure bleeding has stopped
- Remove top pair of gloves, apply water-based lubricant
- Do digital rectal exam to check that
 - Sutures haven't gone through rectal mucosa
 - No openings between vagina and rectum
 - Sphincter feels intact
- Count gauze squares, packs, needles again, make sure count is correct, record number in file notes
- Use ice pack inside pad to help decrease pain and swelling
- Give **pain relief** if needed ([CARPA STM p377](#))

Retained placenta

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

Keep checking for vaginal bleeding or rising fundus (top of uterus).

If heavy bleeding at any time (500mL or more) — see *Primary postpartum haemorrhage* (p58).

If placenta retained

Check

- Pulse, RR, BP, colour, vaginal blood loss
- Was oxytocin given after birth of baby
- Has woman passed urine, does bladder feel full
 - If unable to pass urine — may need indwelling urinary catheter (p281)

Do

- Put baby to mother's breast, encourage baby to start sucking
- If woman had oxytocin — try controlled cord traction again (p166)
 - If cord has lengthened — may need to move clamp closer to vulva
- If woman has not had **oxytocin** — give IM single dose into thigh — 10 international units
 - **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 (p166)
 - If no signs of separation — try controlled cord traction (p166) **AND** take extra care to guard uterus by applying counter traction — F 4.29
 - 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 — F 4.29



4.29

If placenta delivers

- See *Checking the placenta* (p169), *Rubbing up a contraction* (p168)
- Measure/estimate blood loss if possible
 - If more than 1L loss, or ongoing bleeding — **medical consult**, see *Primary postpartum haemorrhage* (p58)

If placenta still not delivered

Reassure woman. Explain what you are going to do and why.

Check

- Temp, pulse, RR, BP, colour
- Measure/estimate blood loss if possible
- POC test for Hb

Do

- **Medical consult** — may need to go to hospital
- Put in IV cannula ([CPM p84](#)), largest possible, if not already in
 - Start **normal saline** 1L at 125mL/hr
- Put in indwelling urinary catheter ([p281](#)), if not already in place
- Explain to woman that you need to do a digital vaginal exam, and it can be painful
- Give **pain relief**
 - **Nitrous oxide** if available
 - **AND/OR morphine** IV – adult 1–2mg
 - Naloxone must be available
- If skilled and woman consents — do digital 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, 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
 - Placenta retained. **Do not** try controlled cord traction again
- **Medical consult**, send to hospital
- If ongoing heavy bleeding or delay in evacuation — start **oxytocin** infusion (40 international units in 500mL **normal saline**) at 125mL/hr
 - If no infusion pump — monitor carefully
- Continue observations, especially blood loss, until sent to hospital
- **Do not** let woman eat or drink anything — may need operation
- **If placenta delivers** — see *Checking the placenta* ([p169](#)), *Rubbing up a contraction* ([p168](#))

APGAR score

Used to help assess baby immediately after birth. Could have good APGAR scores at first and deteriorate afterwards.

- **If baby non-responsive** — start resuscitation straight away (p70). **Do not** wait for first APGAR score

To check baby's heart rate

- Listen with stethoscope over lower left chest
- *OR* put 2 fingers over lower left chest to feel heartbeat
- *OR* feel at base of umbilical cord close to abdomen

Do

- Score each of the 5 signs 0 to 2 — to give total score out of 10. See Table 4.2
- Check APGAR scores at **1 minute** and **5 minutes** after birth
- **Record in file notes**
 - Scores — at 1 minute and 5 minutes
 - How long it took for baby to breathe normally
 - How long it took for baby to 'pink up'
 - How long before heart rate 100 beats/min or more

Table 4.2: APGAR score

APGAR sign	Score 0	Score 1	Score 2
Appearance (central colour)	Grey, blue, pale	Body pink but hands and feet pale or blue	Good colour, pink all over
Pulse (heart rate)	Absent	Less than 100 beats/min	100 beats/min or more
Grimace (reflexes, response to stimulation)	No response	Pulls a face, grimaces	Coughs, sneezes, pulls away
Activity (muscle tone)	Arms/legs floppy	Some flexion, elbows/knees a little bent	Flexed, all limbs moving well
Respirations (breathing)	Absent	Slow, weak, irregular	Good, strong cry

Interpreting APGAR score

- **8–10** — Normal score, care for baby as usual ([p184](#))
- **4–7** — Low score, baby needs some help
 - Ask helper to find Newborn resuscitation ([p70](#)) or Newborn needing special care ([p76](#))
 - While they are finding this
 - If RR 40 breaths/min or less and/or heart rate less than 100 beats/min — start assisted ventilation with neonatal bag-valve-mask using room air at 40–60 breaths/min
 - If RR more than 40 breaths/min — give **oxygen** through cupped hand over mouth and nose
- **0–3** — Very low score, baby needs help straight away
 - Ask helper to find Newborn resuscitation ([p70](#))
 - While they are finding this, start assisted ventilation with neonatal bag-and-mask using room air at 40–60 breaths/min
 - If heart rate less than 60 beats/min after 30 seconds of ventilation — start external chest compressions (CPR at ratio 3 compressions to 1 breath), attach bag and mask to **oxygen** 10L/min

Keeping baby warm after birth

- Normal newborn temperature is 36.5–37.5°C under arm
- Babies lose heat very quickly, can quickly get cold after birth
- Cold will stress baby, cause breathing problems (respiratory distress) or low BGL (hypoglycaemia), make resuscitation more difficult

Risk factors for low temperatures

- Low birth weight
- Preterm
- Sick
- Resuscitated straight after birth
- Breathing problems
- Mother with diabetes
- Born before arriving at clinic and has become cold
- See *Newborn needing special care* if any risk factors present ([p76](#))

Attention

- **Best way to warm baby is against mother's skin**
 - **Keep baby's head covered** — where most heat is lost
 - Cover back of baby with bunny rug, sheet, clothing
- **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 warm outside — open doors and windows
- Lots of clean, pre-warmed towels, sheets, blankets. Warm by putting in sun, wrapping around hot water bottle or put near heater
- Bubble wrap, space blanket, cling wrap
- If less than 28 weeks gestation — thick plastic bag

What you do

- **As soon as baby born**, put onto mother's chest, skin-to-skin, and dry thoroughly with warm dry towel
- 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 space blankets/ bubble wrap/ towels around baby's body, 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 — F 4.30
 - Wrap body (not head) again in bubble wrap/cling wrap/ space blanket
 - Give to helper to hold and watch over
- After placenta delivered and mother comfortable, take baby's temp under arm (axillary). Make sure skin dry, thermometer 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** — F 4.31. Baby will warm up faster after a good feed
 - If unable to breastfeed — help mother express some colostrum (p200) and syringe/drop into baby's mouth



4.30



4.31

Babies less than 28 weeks gestation

- **Do not** dry baby
- Place immediately in thick plastic bag or wrap
 - Appropriate size, food grade, heat resistant
- Head out, body completely covered
- Cover head with small hat
- Aim for normal temperature — 36.5–37.5°C under arm. Avoid overheating

Care of normal newborn for first 24 hours

Immediate care of babies who **didn't need active resuscitation** at birth, and ongoing care of babies who remain well with no risk factors ([p76](#)).

Immediate care after birth

If baby looks unwell — call for help, see *Newborn resuscitation flowchart* ([p68](#)), **medical consult** straight away.

- Leave baby skin-to-skin on mother's chest/abdomen for as long as possible — encourage early breastfeeding ([p199](#))
- If not skin-to-skin — wrap baby warmly. See *Keeping baby warm after birth* ([p182](#))

Check

- Temp under arm, heart rate, RR, O₂ sats, capillary refill, colour — work out REWS ([p8](#))
 - Repeat every 15 minutes for first hour
- Umbilicus for bleeding, clamp on properly
- **Do not** rush to weigh baby. Wait until after first breastfeed
- If any observations not normal or you are concerned — **medical consult**

Normal observations for newborn baby

- Temp — 36.5–37.5°C under arm
- Heart rate — 110–160 beats/min
- RR — 30–60 breaths/min
 - No distress — no grunting, nasal flaring, chest in-drawing (sucking in of soft tissues around rib cage or neck)
- O₂ sats — can take 10 minutes to reach 90% or more in room air in after-birth period, then reaches 95% or more as normal rate
- Colour — tongue and lips pink. Not pale or blue
- Movement — active when awake, moving all limbs with good tone. Not floppy or stiff
- BGL — more than 2.6mmol/L
- Feeding — gets started with breastfeeding. Not vomiting

Some babies at higher risk of becoming unwell in first 24 hours and needing additional care, even if well at birth. If baby has any risk factors ([p185](#)) — see *Newborn needing special care* ([p76](#)).

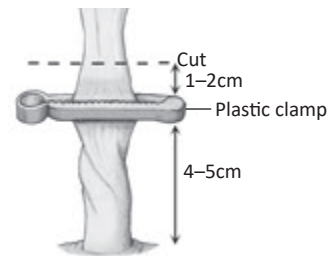
Do not

- **Do not** rush to weigh baby. Wait until after first breastfeed

Risk factors		
Mother's history	Labour and birth	Newborn period
<ul style="list-style-type: none"> • Little or no antenatal care — less than 4 visits • Diabetes • Alcohol and/or other substance use • GBS positive • Current STI • High BP 	<ul style="list-style-type: none"> • Mother needing help with birth • Baby needing any resuscitation at birth • Maternal fever in labour • Meconium-stained liquor (green or brown amniotic fluid) 	<ul style="list-style-type: none"> • 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

Do

- Trim cord if necessary
 - Clamp remaining cord with plastic cord clamp 4–5cm from abdomen — F 4.32, make sure it is snapped shut
 - Remove metal cord clamp put on after birth
 - Trim cord 1–2cm above plastic clamp — F 4.32, or at length requested by mother or support person
- 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



4.32

Ongoing care of normal newborn

- If baby well — observations every hour for 4 hours
- If GBS status of mother not known (no screening at 36 weeks) — continue routine observations, including temp, every 6 hours for 24 hours
- If observations not normal (eg increased RR or heart rate, rash/redness to head, face or eyes) — **medical consult**
- If baby jittery (jumpy) and unsettled, or not feeding after birth — consider having mother express some colostrum ([p200](#)) and syringe/drop into baby's mouth, check BGL, **medical consult**
 - If BGL less than 2.6mmol/L — treat straight away ([p78](#))

After first hour or first breastfeed

- Head-to-toe check of baby — including abnormalities, birth marks, bruising
 - If sending to hospital — can be done there
 - If not sending to hospital — ask doctor or midwife how this is done
- Measure length, head circumference
- Start file notes and growth chart
- Check mother's hepatitis B results
 - If mother HBsAg positive or status not known — give at different sites
 - **Hepatitis B immunoglobulin** IM – newborn 100 units
 - **AND hepatitis B immunisation** IM – newborn 0.5mL
 - Give hepatitis B immunoglobulin within 12 hours of birth
 - If clinic doesn't have hepatitis B immunoglobulin — **medical consult**
 - If mother HBsAg negative — give **hepatitis B immunisation** IM – newborn 0.5mL
- Check mother's syphilis serology
 - If active syphilis at any time during pregnancy or if syphilis serology not known — **medical consult** about treating baby
- If mother had recent infection, especially STI — **medical consult**
- Continue to encourage breastfeeding
 - Only contraindications — lesions on breasts, mother's medicines
- Fill out birth registration forms ([p187](#))

If mother and baby stay in community

- Encourage mother to breastfeed baby on demand ([p199](#))
- Check baby has passed meconium and urine
 - Cotton wool ball in disposable nappy can make it easier to check for urine
 - If urine or meconium not passed within 24 hours — **medical consult**
- Talk with CDC/PHU 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
- After 24 hours, see *Postnatal care of baby* ([p228](#))
- Review baby daily for first week

Birth registration forms

All births must be registered with state/territory register. Attending health professional must complete forms for births out bush, even if woman and baby sent to hospital, or health professional not present at actual birth.

To save time finding forms, ask local maternity service to send a few made-up bundles. Keep with other birthing equipment.

Follow instructions on forms, send to address given on each form.

- Birth Registration form/Statement — lodge within 60 days
- Perinatal statistics form (also called Midwives/Perinatal Data Form)
- Help parents if needed
 - Newborn Medicare enrolment form
 - Relevant Centrelink forms
- If pack not available — call local maternity hospital regarding information needed and where to source forms

Health service requirements

- Set up new patient file notes
- Start vaccination record
- Add to population register and recall lists
- Update community 'birth' book if applicable

Stillbirth

- Stillbirth — any baby 20 or more weeks gestation or weight 400g or more who doesn't show any sign of life at birth
- Miscarriage ([p17](#)) — pregnancy loss at less than 20 weeks gestation or weight less than 400g

Can be distressing, traumatic event for woman and family. Different cultures and language groups react in different ways. Women and family members may understand stillbirth differently, react and respond in different ways. Some Aboriginal women say that, in the old days, a baby who died soon after birth 'with the eyes still closed' was not a source of grief.

Listen carefully, be guided by ATSIHPs, woman's relatives, woman herself. Some younger women may have different cultural values to older family members.

Considerations for health staff, woman and family

- Be guided by ATSIHPs, family members for language to use. 'Passed away', 'lost', 'finished' may be better understood, less offensive than 'died'
- Woman and family members may or may not want to see baby. Always ask. If they 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
- Allow family to spend the time they need with the baby
- If baby goes to hospital with woman — mementos of baby can be taken for the family if they would like them (eg lock of hair, photos, hand/footprints)
- Woman may want baby buried in home community. Relatives may want formal burial, even if baby 'passed away' early in pregnancy. Can have important cultural and spiritual significance
- Father of baby may or may not be directly involved
- Family may believe death caused by unacceptable behaviour of another person, or series of events. May direct anger or frustration at clinic staff
- You or community members may wish to close clinic for a period of time

Do

- **Medical consult** about
 - Stillbirth, for help in 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 woman as the priority
- See *Care of mother — first 24 hours after the birth* ([p171](#))
- Strongly encourage woman to go to hospital with baby for support and care
 - Mother may stay in community, let baby be transferred to hospital
 - Rare that mother and baby stay in community
- Explain that careful management and follow-up now may improve outcome, help prevent problems in future pregnancies. Autopsy (operation to find cause of death) for baby recommended for some reasons

- **If mother agrees to go to hospital —**
 - **Medical consult**, send to hospital straight away
 - Baby must be identified with name band on each leg
 - Talk with retrieval team about options for transporting baby with mother
 - Send placenta. Very important for autopsy process
- **If mother doesn't go to hospital —**
 - **Medical/obstetrician consult**
 - Offer tests in Table 4.3 and as advised
 - Explain that tests aim to find cause of stillbirth
 - See *Postnatal care of mother* (p195)
 - Talk later about suppressing lactation (p203). Can use simple measures or take medicine. Milk usually produced within a few days even if baby stillborn

Management of baby (deceased)

- If woman doesn't go to hospital — talk with her about autopsy for baby
 - Autopsy strongly recommended, talk with family about doing one
 - Explain it may help find out why this baby died, help future pregnancies

If mother consents to autopsy for baby —

- Get consent form from Maternity Unit. Best if mother signs consent form. 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, 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 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, seal bag completely so no leakage
- Include baby's cord blood, consent form for autopsy, letter, pathology form
- Make sure all checks and documentation complete

If mother doesn't consent to autopsy for baby —

- Check placenta (p169) — completeness, texture, cord vessels, knot in cord
- Take cord blood — may be difficult. Collect blood from cord before it is clamped *OR* perform venipuncture on 1 vessel of cord
- Collect mementos (eg lock of hair) if asked to by family



- Carry out basic examination of baby, document findings clearly
 - Check for any obvious abnormalities
 - Record appearance, take photos if parents consent. May help paediatrician diagnose congenital abnormalities
 - Document weight, length, head circumference
 - Assess gestational age if possible
- **Medical consult** or talk with clinical coordinator about how to manage baby. Follow health service guidelines

Table 4.3: Pathology specimens after stillbirth

Sample from	Blood	Swab	Urine
Mother	<ul style="list-style-type: none"> • Serology <ul style="list-style-type: none"> ◦ Syphilis ◦ Toxoplasmosis ◦ Rubella ◦ Herpes ◦ Cytomegalovirus ◦ Parvovirus B19 ◦ Hepatitis B • Blood clotting problems (thrombophilia) <ul style="list-style-type: none"> ◦ Protein C ◦ Protein S ◦ Antithrombin III ◦ Homocysteine ◦ Activated protein C resistance ◦ Anticardiolipin antibodies ◦ Lupus anticoagulant ◦ Kleihauer test (within 24 hours) • FBC • Blood group • Antibody screen • HbA1c • BGL • Blood cultures (if fever or signs of infection) 	<ul style="list-style-type: none"> • If speculum exam – HVS/ endocervical <i>OR</i> if no speculum exam – LVS <ul style="list-style-type: none"> ◦ MC&S ◦ NAAT for gonorrhoea, chlamydia, trichomonas 	<ul style="list-style-type: none"> • MC&S • If no swabs – gonorrhoea, chlamydia, trichomonas NAAT
Baby	<ul style="list-style-type: none"> • Cord blood <ul style="list-style-type: none"> ◦ Chromosomes 		
Placenta	<ul style="list-style-type: none"> • Cord blood – from placental or baby cord 	<ul style="list-style-type: none"> • Baby's side of placenta (cord side) <ul style="list-style-type: none"> ◦ MC&S 	

Documentation

- Labour/birth details
- Birth registration form ([p187](#))
- Medical Certificate of Cause of Perinatal Death completed by doctor
- Perinatal statistics form, send to Perinatal Statistics Unit
- Women entitled to Stillborn Baby Payments — contact Centrelink

Follow-up

- See *Postnatal care of mother* ([p195](#)) and *Mother's 6–8 week postnatal check* ([p219](#)). Look for signs of perinatal depression ([p221](#))
- **Medical consult** about autopsy report and other results
 - Offer tests in Table 4.4 and others as advised

Table 4.4: Follow-up pathology after stillbirth

Reason for stillbirth	Tests
Reason unexplained despite investigations	Blood clotting studies at 8–12 weeks postpartum with medical/obstetric consult
Positive tests for thrombophilia and/or history of <ul style="list-style-type: none"> • Fetal growth restriction • Pre-eclampsia • Placental vasculopathy or thrombosis • Mother or family history of thrombosis • Unexplained fetal death 	Blood clotting studies at 8–12 weeks postpartum with medical/obstetric consult
No investigation done	<ul style="list-style-type: none"> • Blood clotting studies • Investigations as per Table 4.3

- If results affect future pregnancies — arrange obstetrician review
 - Talk with woman about risk, important to be seen early for antenatal care
 - Offer pre-pregnancy counselling ([p84](#))
- Give woman the opportunity to talk about what happened, offer referral to perinatal mental health service
- Talk with woman about available support and counselling services — such as
 - 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. Feelings can persist. Important to debrief after these events and support each other in this process.

- CRANaplus Bush Support Service 1800 805 391

5 Postnatal

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Introduction

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

Check mother and baby every day for 5 days then as needed until 6–8 week postnatal check ([p219](#)). Also see *Postnatal care of baby* ([p228](#)).

Check file notes for

- Discharge summaries for mother and baby
- Woman's blood group, baby's blood group
 - If woman Rh negative, check Kleihauer results, need for further RhD-Ig
- FBC results (Hb), syphilis serology
- Medical, mental health, social problems during pregnancy for follow-up
- Postnatal immunisations needed — see local guidelines

Ask

- How she is feeling
- How baby is going, how she is managing care of baby
- Breastfeeding, breast and/or nipple pain, other problems
- Pain — after-birth pains, abdominal or pelvic, perineal, wound (if present), headache, neck or back, calves
- Problems — fever, vaginal bleeding or discharge, urinary problems, incontinence ([p318](#)), bowels (eg constipation or leakage)
- Mood changes, symptoms of depression or anxiety ([p221](#))
- Plans for contraception ([p333](#)) and baby-spacing

Check

- Temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#))
- Hb — if less than 110g/L see *Anaemia (weak blood) in adults* ([CARPA STM p303](#))
- If diabetes in pregnancy — see *Follow-up of medical problems in pregnancy* ([p209](#))
- Urine — midstream urine U/A. If positive or symptoms of UTI — MC&S
- Breasts, nipples — cracked or sore nipples, redness, inflammation, breast lumps or pain, issues with breastfeeding ([p204](#))
- Uterus — feel for tenderness, firmness. **Do not** feel if Caesarean section
 - Moves down from umbilicus (descends), getting smaller by 1cm a day
 - Breastfeeding helps uterus move down
 - By 6 weeks — usual size in pelvis, not felt in abdomen
- Vaginal loss — colour, amount, smell (ask and look)
 - 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
 - Breastfeeding usually reduces length of bleeding time
 - Not normal — blood clots, smelly vaginal loss, heavy bleeding

If heavy bleeding starts again — see *Secondary postpartum haemorrhage* ([p212](#)).



- If Caesarean section — check abdominal wound. Sutures removed, healing, redness, inflammation
- Perineum — clean, not infected, changing pads often, piles (haemorrhoids)
 - If tear or episiotomy — check healing
 - If attempted vaginal birth before Caesarean section — perineal trauma
- Legs — signs of blood clots ([p138](#)). Check for fever, pain, swelling in calf muscles
- Baby — see *Postnatal care of baby* ([p228](#))

Do

- 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). If not given — **medical consult**
- If Hb less than 110g/L — see *Anaemia (weak blood) in adults* ([CARPA STM p303](#))
- **Iodine** oral once a day — 150microgram. Can be in multivitamin designed for pregnancy and breastfeeding
 - If woman has thyroid condition — **medical consult**
- **Medical consult** about following up medical problems ([p209](#)) in pregnancy (eg high BP, diabetes)

Talk with woman about

- Important to come to clinic for checks for herself and baby over next few weeks, especially if concerns
- Feeding baby
 - Strongly encourage breastfeeding ([p199](#))
 - If not able to breastfeed — talk with midwife, lactation consultant
 - If choosing not to breastfeed — talk about formula feeding ([p236](#))
- Immunisations for baby
 - Check if given before leaving hospital. Organise if needed
- How to sleep baby safely and reduce risk of SIDS
 - To reduce risk of SIDS
 - Sleep baby on their back from birth, not on tummy or side
 - Sleep baby with head and face uncovered
 - **Do not** smoke while pregnant or near baby
 - Provide a safe sleeping environment night and day
 - Sleep baby in adult carer's room in own safe sleeping place, for first 6–12 months
 - Breastfeed baby ([p199](#))
 - Sharing a sleep surface (bed share) with a baby is not recommended. If parents choose to bed share with baby, important to follow all of the steps above for SIDS prevention. Also important to
 - Sleep baby beside 1 parent only — not between 2 parents. Parent should face baby

- Make sure mattress is firm, and baby can't fall off bed. Can put mattress on floor, but be aware of situations where baby could become trapped. **Do not** push bed up against wall
- **Do not** put baby in adult's bed alone, or to sleep on sofa, beanbag or sagging mattress
- **Do not** wrap baby
- **Do not** bed share with babies who are preterm or unwell
- **Do not** bed share with baby when parent or carers are smokers or affected by drugs or alcohol
- Emotional changes after birth — birth experiences, adjustment to mothering, feelings toward baby, fatigue
- Social circumstances and support, domestic/family violence ([p324](#))
- Forms — birth registration, family allowance, Medicare. Where to get help to complete them
- Diet — high fibre, plenty of fluids to keep bowels regular
- Leg exercises and walking — prevent blood clots ([p138](#))
- Pelvic floor exercises ([p283](#)) — help prevent urinary incontinence
- Contraception ([p335](#)) and baby-spacing, sexual health, sexual activity after birth
- When to seek help — signs and symptoms of postpartum haemorrhage ([p58](#)), pre-eclampsia ([p21](#)), infection ([p215](#))

Treat common problems

- After-birth pains — can last a few days, often happen when feeding
 - Give **paracetamol** up to 4 times a day (qid) – adult 1g ([CARPA STM p380](#))
- Constipation — advise exercise, high fibre diet, plenty of fluids
 - If has not passed faeces for 3 days — encourage drinking lots of water, consider laxative (eg bulking agent), faeces softener (eg docusate)
- Haemorrhoids — make sure not constipated
 - Give anorectal cream or suppository, but only for few days
 - If severe, don't get better — **medical consult** about surgical referral
- Urine — may sting tears of vulva, perineum, labia
 - Encourage drinking lots of water
 - Give urinary alkaliniser
 - Advise — kneel or lean forward to pass urine, pass urine in shower/bath
 - Treat UTI ([CARPA STM p411](#))
- Mood — feeling bit sad, teary for few days after birth is common. Reassure
 - If depressed ([p221](#)), acting in strange way, still sad feelings more than 2 weeks after birth — **medical consult**

If simple treatments don't work or other problems — **medical consult**.

If Caesarean section

- Check abdominal wound daily until healed
- Give adequate **pain relief** ([CARPA STM p377](#))



- Encourage to move about as much as possible
- Check for complications of operation
 - Bowels not working (transient ileus)
 - UTI (*CARPA STM p411*) or chest infection (*CARPA STM p309*)
 - Blood clot in leg (DVT) (*p138*)
 - 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 review, 6–8 week postnatal check (*p219*)

Breastfeeding

Breastfeeding is the perfect way to feed a baby.

For breastfeeding — mother needs

- Support from partner, family, friends
- Time to rest and enjoy her baby
- Healthy foods — including bush foods, fruit, vegetables, meat, milk, bread
- Plenty of water to drink
- To avoid smoking, alcohol, other substances

Supporting breastfeeding

- Talk about breastfeeding during pregnancy, offer information
- Promote skin-to-skin contact between mother and baby straight after birth for at least an hour or until first breastfeed
- Encourage mother to recognise when baby ready to breastfeed. Offer help if needed
- Important to keep baby and mother together after birth and in early days/weeks of life to enable breastfeeding and bonding to be established



5.1

If help needed

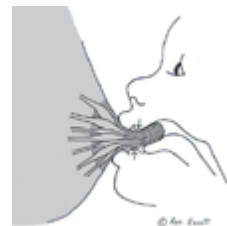
- Make sure mother has privacy and is comfortable
- Baby should be warm, but doesn't need to be tightly wrapped
- Mother supports baby behind shoulder/neck area — F 5.1
 - **Do not** grasp or hold baby's head to position baby at breast
- Baby close to mother's body, head and shoulders facing breast, nose and mouth at level of nipple
- 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



5.2

Signs that baby attached and sucking

- Optimal attachment — F 5.2
 - Poor attachment — F 5.3
- Mother and baby comfortable, no breast or nipple pain when baby sucks
- Baby on its side, chest-to-chest with mother, chin to her breast



5.3



- Baby's head slightly back, supported on mother's arm
- Baby's mouth wide open with most of the dark part of breast around nipple (areola) in baby's mouth
- Baby's lips flanged around areola with no air leaks
- Baby's jaw moves when sucking, no 'clicking' noise
- Swallowing can be seen and heard

Young babies

- Baby should be fed 'on demand' — every time it cries for a feed
- Babies may need to feed 8–12 times in 24 hours, sometimes more often
- Some babies want to feed for 5 minutes, other babies for much longer
- Baby can't be overfed on breast milk, will drink just the right amount for good growth
- If baby not growing well in first 2 weeks after birth — may be breastfeeding issue ([p204](#))
- Talk with mother about how baby has been feeding, sleeping, wet and dirty nappies — babies should have around 6 wet nappies a day
- Both mother and baby need full check up if mother, family or health practitioner worried

Older babies

- Exclusive breastfeeding for about 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 solid food and boiled and cooled water
- Continue to breastfeed until 1–2 years, or longer if mother and baby want
 - At least 12 months may help protect against infections
- Older baby having fewer breastfeeds still benefits from breast milk
- As baby has more other foods, breast milk supply will slowly decrease
- If mother wants to stop breastfeeding older baby — talk about slowly reducing breastfeeds over a period of time
- Breastfeeding without appropriate introduction of other food at around 6 months may lead to serious growth problems. See *Appropriate first foods* ([p234](#))

Expressing and storing breast milk

- Some mothers express colostrum or breast milk if baby is sick or preterm, someone else caring for baby, or if away from baby
- 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
- Can hand express — F 5.4 or use manual or electric breast pump — F 5.5



5.4

- Store breast milk in clean, sealed plastic container
 - Fridge — up to 72 hours, at back where it is coldest
 - 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, doesn't have to be warmed
 - **Do not** use microwave to thaw or heat milk
- Talk with midwife or lactation consultant for more information



5.5

Medicines

Some medicines taken by mother can pass into breast milk and be harmful for baby, especially if less than 3 months old.

Do not give medicine to breastfeeding mother without checking it is safe. Check a medicine reference book or contact your closest Pregnancy Drug Information Centre for more information.

Special circumstances

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
- If baby needs tube feeding — expressed breast milk can be given via nasogastric tube

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 positive)
 - Talk with CDC/PHU HIV/AIDS specialist, make individual breastfeeding plan
- Mothers with syphilis, hepatitis A, hepatitis B, hepatitis C can breastfeed their babies
 - If hepatitis C and cracked or bleeding nipples — advise to express and discard milk until bleeding areas healed
 - Talk with someone experienced in this area — CDC/PHU, lactation consultant

Alcohol and other substances

- Best for baby to breastfeed, even if mother smoking or drinking alcohol



- Advice about alcohol for breastfeeding mothers
 - Baby will get alcohol and other substances through her breast milk
 - Not drinking alcohol is the safest option
 - Women should avoid alcohol in first month after birth, until breastfeeding well established
 - After that
 - Limit alcohol to no more than 2 standard drinks a day (*CARPA STM p209*)
 - Avoid drinking immediately before breastfeeding
 - If planning to drink — think about expressing milk in advance
 - 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, involve other services for help
- Advice about smoking for breastfeeding mothers
 - Best to breastfeed baby — benefits greater than risks
 - Don't smoke just before or while breastfeeding
 - Minimal amounts of nicotine in breast milk, still exposure to passive smoke
 - Nicotine may reduce milk production

Caring for breastfed baby away from its mother

Breastfed baby may need to be looked after by someone else (eg if mother goes to hospital).

- If baby very young — encourage mother to express enough breast milk to give baby for time she will be away
 - No other drinks or food should be given to young baby if possible. See *Infant feeding guidelines (p234)*
 - Encourage mother to continue to express while away to maintain supply
- Older baby may already be having other food or drinks. Give these until mother returns
- Mother may ask another woman to breastfeed baby. If any concerns — talk with midwife or lactation consultant

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 175–200g each week. **If growth poor — immediate intervention needed**

Suppressing lactation

Woman wants 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), wear firm bra
- If has been breastfeeding — may need to express some milk for comfort, decrease over few days until milk supply decreases
- May take a few days. Advise to take **paracetamol** up to 4 times a day (qid) for pain if needed – adult 1g (*CARPA STM p380*)
- If concerns — talk with midwife, lactation consultant

For more information

Australian Breastfeeding Association — www.breastfeeding.asn.au

Breastfeeding — common issues

Most issues temporary and not a reason to stop breastfeeding. Give consistent, supportive advice. Talk with midwife or lactation consultant if not sure.

Sore nipples

- Sore nipples common, especially in first 2 weeks after birth
- If untreated — can lead to cracked or bleeding nipples, mastitis ([p207](#))

Causes

- Usually poor attachment — may be due to
 - Breast engorgement or poor positioning — common
 - Baby having tongue or lip tie. If suspected — **medical consult**
- Occasionally bacterial or fungal infections of skin — check mother's nipple and baby's mouth for oral thrush

Do

- Give **paracetamol** up to 4 times a day (qid) — adult 1g for pain relief ([CARPA STM p380](#)). Use in time to take effect before starting feed
- If fungal infection — **medical consult** about applying **miconazole 2%** cream twice a day (bd) to nipples
 - If infection spread to baby's mouth — give baby **nystatin** oral liquid 4 times a day (qid) — child 1ml
- If bacterial infection suspected — **medical consult**
- Avoid use of creams except purified lanolin
 - Use small amount **purified lanolin** on sore spot only. No need to wipe off, can continue breastfeeding
 - All other creams need to be washed off before baby breastfeeds

Before feed

- Reassure woman that nipples heal well if care taken with attachment
- Ensure woman comfortable. Expressing a little milk will soften areola, get milk flowing for feed
- Warm compress held against breast is soothing, encourages flow of milk

During feed

- Offer less painful side first
- Check baby's position — see *Signs baby is attached and sucking* ([p199](#))
- Try different feeding positions — across mother's chest, in 'football' hold, lying beside mother. Suggest feeding positions are changed from feed to feed
- If too painful to feed — rest nipple for 12–24 hours to help healing. Express milk by hand or pump ([p200](#)), give to baby with medicine cup or spoon
- Discourage the use of bottles, baby learns to suck in a different way

After feed

- Check nipple for blanching — indicates baby hasn't attached well

- Suggest mother smear some breast milk on nipple, let it air dry
- Assess daily until resolved
- Talk with lactation consultant or midwife

Breast engorgement

- Woman not unwell, may have low-grade fever
- Both breasts and axilla become hard, 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
 - Problems — sleepy baby, feeds restricted, mother and baby separated

Check

- Temp, pulse, RR, BP

Do not

- **Do not** restrict woman's fluid intake, won't help engorgement, may be harmful

Do

- Pain relief for mother can include
 - **Paracetamol** up to 4 times a day (qid) – adult 1g (*CARPA STM p380*)
 - Ice packs to breasts after feeds
 - Expressing some milk between feeds to relieve tension in breast. Can do in shower or after warm compress
- Management aimed at getting baby to feed well — see *Breastfeeding (p199)*
 - 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
- Reassure mother that engorgement will improve after 24–48 hours
- Assess daily until resolved

Blocked milk ducts

- Woman looks and feels well
- Suspect blocked milk duct if tender lump or swollen area in breast

Check

- Temp, pulse, RR, BP
- Check for tender lump or swollen area in breast, nipple damage, tissue damage, signs of engorgement, red areas, tender areas including under arms



Do

- Give **paracetamol** up to 4 times a day (qid) – adult 1g for pain relief (*CARPA STM p380*). Use in time to take effect before starting feed
- Apply warmth to area before feed — hot water bottle, hot pack, shower
- Feed from affected breast first, make sure breast emptied at each feed
- During feed, gently but firmly massage lump toward nipple
- Change feeding positions from feed to feed to help drain breasts
- Advise mother to come back to clinic straight away if fever or feels unwell. May be developing mastitis

Early, effective treatment of breast engorgement and blocked milk ducts can prevent mastitis.

Milk supply

- In early postnatal period, milk supply can be affected by
 - Part of placenta or membranes left inside uterus (retained products)
 - Poor attachment of baby to breast — due to positioning, baby preterm, baby tongue or lip tied
 - Sore nipples making attachment challenging
 - Less common — hormonal issues, breast surgery, some medicines
- Later, mother may be concerned about low supply if breasts feel soft, baby feeding frequently. Both can be normal — baby will naturally want to feed more often during growth spurts or if unsettled

Ask

- How baby is attaching, feeding — see *Breastfeeding (p199)*
- Mother's postnatal wellbeing — see *Postnatal care of mother (p195)*

Do

- If retained products suspected — **medical consult**
- Check baby's history, neonatal check — see *Postnatal care of baby (p228)*
- Reassure mother that baby getting enough breast milk if — bright eyes, wet mouth and tongue, 5–6 wet nappies a day, pale coloured urine, 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 (*p200*)
- Supply will decrease if baby has other drinks (eg formula or water)
- Sometimes domperidone tablets given to help with breast milk supply (eg if they have a growing preterm baby)
 - Also need to keep expressing to ensure supply
 - Domperidone slowly reduced once supply established

Mastitis

- Inflammation of breast tissue. Always consider in breastfeeding woman with flu-like symptoms
- Woman usually has fever and feels unwell
- Usually only 1 breast, or part of 1 breast, affected

Causes

- Infection in breast due to
 - Cracked nipples with broken skin
 - Untreated engorgement and/or blocked milk ducts
- Prolonged pressure on breasts — tight bra, holding or pressing on breast during feeding

Ask

- Previous history of mastitis
- How baby is attaching, feeding, feeding on one or both sides, other concerns — see *Breastfeeding* (p199)

Check

- Temp, pulse, RR, BP, O₂ sats — work out REWS (p8)
- Check breasts for tissue damage, nipple trauma
- Affected part of breast appears reddened, may be hard, tender/painful
- May have enlarged tender lymph nodes in armpit

Do

- **Medical consult** about all women who may have mastitis
 - If very unwell — need to send to hospital, IV antibiotics
- If doesn't need IV antibiotics —
 - Give **di/flucloxacillin** oral 4 times a day (qid) for 10 days – adult 500mg
 - *OR* **cefalexin** oral 4 times a day (qid) for 10 days – adult 500mg
- If allergic to penicillin — **medical consult**
- For pain relief — give
 - **Paracetamol** up to 4 times a day (qid) – adult 1g (*CARPA STM p380*)
 - *OR* **paracetamol-codeine** oral up to 4 times a day (qid) – adult 500+30mg (*CARPA STM p381*)
- Encourage woman to continue breastfeeding to empty breast
 - Feed from affected breast first **unless pus draining from nipple**. If pus — hand-express to empty breast
 - To improve milk drainage from breast — advise to feed baby often, check baby is well-positioned and sucking well, especially on affected side
 - If baby doesn't feed well on affected side — encourage woman to express milk to drain breast
- Encourage rest, good diet, 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, usually has fever
- Localised swelling, redness, pain in 1 breast
- May be 'pointing' swelling like a boil on skin

Causes

- Bacterial infection hasn't drained properly, localised collection of pus
 - May develop if mastitis not treated properly

Check

- Temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#))

Do

- Discourage woman from eating or drinking — may need operation to drain
- **Medical consult** about management — IV antibiotics, IV fluid, send to hospital
- Start IV antibiotics straight away
 - Give **flucloxacillin** IV every 6 hours (qid) – adult 1g
 - If allergic to penicillin — **medical consult**
- For pain relief — give
 - **Paracetamol** up to 4 times a day (qid) – adult 1g ([CARPA STM p380](#))
 - *OR* **paracetamol-codeine** oral up to 4 times a day (qid) – adult 500+30mg ([CARPA STM p381](#))
- Important to drain breast. Encourage breastfeeding unless near nipple or pus draining. In this case, express by hand or breast pump on affected side and breastfeed baby on the unaffected side — see [Breastfeeding \(p200\)](#)
- If too painful to feed baby or express — gentle massage under warm shower

Follow-up of medical problems in pregnancy

- Follow-up significant medical problems as early as possible and at 6–8 week postnatal check
- Advise women with chronic medical problems or risk factors for pregnancy-induced problems to plan future pregnancies carefully
- Talk about contraception, baby-spacing, coming to clinic early when pregnant for antenatal and specialist medical care

Anaemia

- See *Anaemia (weak blood) in adults* ([CARPA STM p303](#)) if any of
 - Anaemia during pregnancy
 - Hb less than 110g/L at first check after birth
 - Heavy vaginal bleeding during or after birth (postpartum haemorrhage)
 - Caesarean section birth

Heart disease

- If woman has RHD —
 - Check she is on recall register
 - Are prophylactic **benzathine penicillin (penicillin G)** injections up-to-date
 - See *Acute rheumatic fever and rheumatic heart disease* ([CARPA STM p294](#))
- Medical review if
 - Heart disease caused problem or needed medicine during pregnancy
 - Murmur diagnosed during pregnancy not yet investigated

High BP

- Check discharge papers for plan to control BP in community
 - See woman every week for 6 weeks. Check BP, weight, U/A for protein
 - High BP medicine may need
 - Type or dose changed, if chronic high BP
 - Slow withdrawal, if pregnancy-induced high BP
 - If BP not controlled according to plan — **medical consult**
- Medical review at 6 week postnatal check, or earlier if needed
- If recurrent or early severe pre-eclampsia — medical review early in postnatal period. May need special tests to investigate problem, referral to specialist
 - Follow management plan decided at this visit
- Review 3 months after birth. Check BP, weight, U/A for protein
 - If BP still high — manage as chronic high BP ([CARPA STM p268](#))
 - If U/A still shows protein (1+ or more) — investigate cause



STIs

Gonorrhoea, chlamydia, trichomonas

- If positive tests for gonorrhoea, chlamydia or trichomonas in pregnancy —
 - Check if treatment given. Special considerations mean trichomonas may not have been treated in pregnancy ([p249](#))
 - Check that contact tracing done and partner/s treated
 - If mother not treated during pregnancy — baby needs medical review

Syphilis

Active syphilis in pregnant woman is a **medical emergency**.
Positive serology should have been managed definitively during pregnancy.

- Check results of syphilis tests taken during pregnancy and at birth ([p247](#))
 - If unsure whether treated — talk with sexual health unit
- If the mother has positive syphilis serology — check baby's risk of congenital syphilis was assessed. If baby was not born in hospital — always do **medical/sexual health consult** about baby's risk

Urinary tract infections

- If urinary symptoms ([CARPA STM p411](#)) — mid-stream urine for MC&S
- If persistent or recurrent urinary tract infections, kidney infection (pyelonephritis) or *proteus* urinary infection in pregnancy —
 - Mid-stream urine for MC&S
 - Take blood for FBC, UEC
 - Renal ultrasound if not already done
 - Medical review

Diabetes

If diabetes in pregnancy — need careful follow-up.

Pre-existing diabetes

- See *Diabetes* ([CARPA STM p254](#))
- If breastfeeding —
 - **Do not** use sulfonylurea
 - If using insulin — increased risk of high or low blood glucose (hyper or hypoglycaemia). May need doses changed while breastfeeding
- Talk about
 - Contraception ([p335](#)) and planning next pregnancy
 - Pre-pregnancy check

Gestational diabetes

- Some women diagnosed with gestational diabetes will actually have pre-existing diabetes
 - May be identified in hospital (BGL test) and discharged with care plan

- For all other women
 - All medicines for blood glucose control stopped after birth
 - 75g OGTT at 6–8 week postnatal check. If not possible — do HbA1c at 4 months
 - See *Testing for diabetes* ([CARPA STM p234](#)) to interpret results
 - Put on recall register for
 - Yearly fasting OGTT
 - Adult Health Check ([CPM p123](#))
 - Talk about
 - Risk of developing Type 2 diabetes later on
 - Early check in next pregnancy — testing for diabetes at first visit. May have gestational diabetes in future pregnancies
 - Healthy diet and exercise, keeping weight down

Secondary postpartum haemorrhage

Abnormal vaginal bleeding between 24 hours and 6 weeks after birth.

Causes

- Part of placenta or membranes left inside uterus (retained products)
- Infection in uterus (endometritis). Can be caused by retained products
- Tears of birth canal or uterus scar — may be infected
- Other — cervical polyps, cancer, ectropion, blood clotting disorders
- May be more than 1 cause

Urgent problems — emergency

- Very heavy bleeding (bright with large clots)
- Signs of shock
- Infection in uterus

Signs of shock

- Restless, confused, drowsy, unconscious
- Pale, cool, moist skin
- Fast breathing
- Pulse fast (more than 100 beats/min) or difficult to feel
- Low BP (systolic less than 100mmHg)
- Capillary refill longer than 2 seconds

Check first

Remember — Life support — DRS ABC (*CARPA STM p10*).

- Temp, pulse, RR, BP, O₂ sats — work out REWS (*p8*)

Do — if emergency

- **Medical consult**
- Give **oxygen** to target O₂ sats 94–98% *OR* if moderate/severe COPD 88–92%
 - Non-rebreather mask 10–15L/min
- Put in 2 IV cannula (*CPM p84*), largest possible
 - Give **normal saline** – 1L straight away
 - If you can't get IV cannula in — put in IO needle (*CPM p88*)
- Put in indwelling urinary catheter (*p281*) and measure hourly
- Give **oxytocin** IM single dose – 10 international units
- Feel uterus. If soft/boggy — see *Rubbing up a contraction (p168)*
- Prepare **oxytocin** infusion (40 international units in 500mL **normal saline**)
- If directed to by doctor — give **misoprostol tablet**

Check file notes

- Date and details of birth, estimated blood loss, were placenta and membranes thought to be complete, perineal tears or episiotomy, any complications
- Last Hb and vaginal swab results
- Contraception used since birth — especially Depo or ENG-implant. Could it be causing bleeding
- Medical history, allergies, medicines

Ask

- Bleeding — how much, what colour, 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)
- Discharge, smell
- Pain — where, when did it start
- Any other symptoms — fever, chills, nausea, vomiting

Check

- POC test for Hb
- Take blood for blood cultures before giving antibiotics
- 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
 - Put pad between woman's legs. Change pad each time you check
 - Save and weigh all pads (1g increase= 1mL loss)
- Abdomen (*CARPA STM p18*) — feel for tenderness, rebound, guarding
- Uterus
 - Fundal height (*p98*)
 - Tender, painful, hard or soft
 - If soft/boggy — see *Rubbing up a contraction (p168)*
- Speculum exam, if skilled (*p272*)
 - 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 ([p278](#))
 - Tenderness, masses, size of uterus, is cervix painful when moved

Do not

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

Do

- If well, no signs of infection, only small amount of blood loss (less than 500mL) — **medical consult** about treating in community
- See *Infections after childbirth* ([p215](#))
- **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 **amoxi/ampicillin** IV single dose – adult 2g
 - **AND metronidazole** IV single dose – adult 500mg
 - **AND gentamicin** IV single dose (doses [p373](#))
 - **THEN amoxi/ampicillin** IV every 6 hours (qid) – adult 1g
 - **AND metronidazole** IV every 12 hours (bd) – adult 500mg
 - If delay in sending to hospital of more than 24 hours — give **gentamicin** once a day (doses [p373](#)) if directed by doctor
 - If allergic 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

Infections after childbirth

If woman unwell and/or febrile in first 6 weeks after childbirth — examine carefully. Sepsis can be subtle in onset and women may deteriorate rapidly (p8).

Common sites of infection

- Uterus — endometritis (*below*). **Most common** cause of postnatal infection
- Urinary tract — UTI (*CARPA STM p411*)
- Breast — mastitis (*p207*)
- Wound — perineal or abdominal (*p218*)
- Chest (*CARPA STM p309*)

Remember: Can be more than 1 type of infection.

Ask

- Breastfeeding issues (*p204*)
- Symptoms of chest infection
- Bowel or urine problems

Check

- Temp, pulse, RR, BP, O₂ sats — work out REWS (*p8*)
- Check breasts for signs of inflammation — tenderness, red areas, lumps in breast or axilla. See *Mastitis* (*p207*)
- Listen to breathing (*CPM p189*)
- Abdominal assessment (*CARPA STM p18*)
 - If Caesarean section — check wound
- Perineum — sores (*p256*), episiotomy, tears, offensive discharge
- Signs of DVT or PE (*p138*)
- U/A

Do

- If signs of infections — see
 - *Uterus infection (endometritis)* (*below*)
 - *Abdominal and perineal wound infections* (*p218*)
- **Medical consult** about all women with possible postnatal infection
 - Consider blood cultures

Uterus infection (endometritis)

Problems

- May be heavy vaginal bleeding
- Sepsis — bacteria infecting uterus enter bloodstream

If woman is or starts bleeding heavily — see *Secondary postpartum haemorrhage* straight away (*p212*).



Causes

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

Check file notes

- Date and type of birth
- Were placenta and membranes thought to be 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, smelly (offensive)
- Has she had sex since birth, was there any pain
- Any other symptoms. Woman may complain of
 - Feeling unwell, no energy
 - Fever, chills
 - Nausea, vomiting, poor appetite
 - Difficulty breathing, chest pain, abdominal pain, pain in legs

Check

- Temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#))
- Uterus — feel for
 - Height of fundus ([p98](#))
 - Tenderness, bulkiness, firm or soft
 - 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, if skilled ([p272](#)) — cervix open or closed
- Standard STI check ([p238](#))
- Bimanual exam, if skilled ([p278](#)) — tenderness, masses, size of uterus, is cervix painful when moved

Do

- **Medical consult** about sending to hospital
- **Need to send to hospital if**
 - Very unwell and/or signs of sepsis ([p8](#))
 - 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 ([CPM p84](#)), largest possible
 - 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 single dose – adult 1g. If IM — mix with 4mL **lidocaine (lignocaine) 1%**
 - **AND azithromycin** oral single dose – adult 1g
 - **AND metronidazole** IV single dose – adult 500mg
 - If allergic to penicillin — **medical consult**
 - If delay in sending to hospital of more than 24 hours and directed to by doctor — give **gentamicin** IV once a day (doses [p373](#))
- **While waiting for evacuation**
 - If pain relief needed — give
 - **Paracetamol** up to 4 times a day (qid) – adult 1g ([CARPA STM p380](#))
 - **OR paracetamol-codeine** oral up to 4 times a day (qid) – adult 500+30mg ([CARPA STM p381](#))
 - **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 single dose – adult 1g
 - **AND ceftriaxone** IM single dose – adult 500mg mixed with 2mL **lidocaine (lignocaine) 1%**
 - Next day give **amoxicillin-clavulanic acid** oral twice a day (bd) for 10 days – adult 875+125mg
 - Day 8 give **azithromycin** oral single dose – adult 1g
 - If allergic to penicillin — **medical consult**



- If pain relief needed — give
 - **Paracetamol** up to 4 times a day (qid) — adult 1g (*CARPA STM p380*)
 - *OR* **paracetamol-codeine** oral up to 4 times a day (qid) — adult 500+30mg (*CARPA STM p381*)
- Assess daily for 5 days (or until antibiotics finished). Make sure she has 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* for follow-up (*p260*). Remember to treat partner/s

Abdominal and perineal wound infections

Check

- Take swab of wound site, send for MC&S
 - Check swab results and antibiotic sensitivity
- Assess daily, clean and dress wound until healed

Do

- **Medical consult** about
 - Removing any stitches
 - Antibiotics
 - Give **amoxicillin-clavulanic acid** oral twice a day (bd) for 5 days — adult 875+125mg
 - If allergic to penicillin — **medical consult**
- If pain relief needed — give
 - **Paracetamol** up to 4 times a day (qid) — adult 1g (*CARPA STM p380*)
 - *OR* **paracetamol-codeine** oral up to 4 times a day (qid) — adult 500+30mg (*CARPA STM p381*)
- 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
- If wound not improving after 1–2 days of treatment — **medical consult**

Mother's 6–8 week postnatal check

Opportunity to assess mother for medical, mental health, social and emotional, sexual health issues — prevent sickness, promote general health and wellbeing in mother.

Check file notes and ask woman about

- Pregnancy, labour, birth
- Date of last cervical screening and result — is it due again
- Immunisations — whooping cough, influenza
- Test results
 - Last genital swabs, any treatment
 - Syphilis serology — date, any treatment
 - Hb
 - Rubella serology — date of MMR immunisation, if given
 - Hepatitis B serology, hepatitis C serology. See *Hepatitis* ([CARPA STM p363](#))

Ask

- General health and wellbeing, sleep, exercise
- Nutrition — diet
- Breasts — breastfeeding ([p199](#)), issues with breasts or nipples ([p204](#))
- Abdomen — pain, wound healing if Caesarean birth
- Vaginal loss or bleeding (lochia) — colour, amount, smell
- Urine problems — urinary symptoms, incontinence ([p318](#))
- Faeces — constipation, incontinence
- Perineal healing — pain, ongoing discharge
- Sex — pain or discomfort, safe sex advice ([p252](#))
- Contraception ([p335](#)) and baby-spacing
 - Advise to wait at least 2 years before becoming pregnant again
- Medicines
- Smoking or substance use
- Emotional wellbeing ([p221](#)) — sadness, depression, anxiety, mood changes, unusual behaviour, daily coping strategies
- Relationship difficulties or concerns
- Domestic/family violence ([p324](#))
- Parenting concerns
- Social supports, extended family involvement, isolation, mobility
- Financial situation — social security, family payments, Medicare

Check

- Standard STI check ([p238](#))
- Cervical screening if due — **if** perineum healed **and** lochia has stopped ([p289](#))
- If perineal tear or episiotomy — check perineal healing



- Any tests needed for follow-up of problems in pregnancy
 - Heart disease ([p209](#)), high BP ([p209](#)), STI ([p210](#)), UTI ([p210](#)), diabetes ([p210](#))
- POC test for Hb
 - If Hb less than 110g/L — take blood for FBC, see *Anaemia (weak blood) in adults* ([CARPA STM p303](#))
- U/A
 - If protein 1+ or more — send urine for MC&S and ACR, see *Chronic kidney disease* ([CARPA STM p244](#))
- If UTI symptoms — offer treatment ([CARPA STM p411](#)), send urine for MC&S
- Do Edinburgh Postnatal Depression Scale ([p221](#))

Do

- Treat immediate problems, arrange follow-up if needed
- Encourage pelvic floor exercises ([p283](#)), especially if incontinent ([p318](#))
- If incontinent — medical review
- Immunisations
 - If not immune to rubella — offer MMR
 - Explain she should not get pregnant for next 4 weeks
 - If HBsAg and Anti-HBs negative — consider **hepatitis B immunisation**. See *Hepatitis* ([CARPA STM p363](#))
 - If no **whooping cough (pertussis) immunisation** in third trimester or early postnatal period — offer to woman and immediate family
 - If state/territory schedule incomplete — offer **pneumococcal immunisation**
 - Encourage woman to check that family has immunisations up to date
- Talk about and arrange contraception, if not already done ([p335](#))
- **Medical consult** about abnormal findings
- If symptoms of depression, domestic/family violence issues, difficulties caring for self or baby, social isolation, substance abuse, smoking or relationship issues — provide emergency contact details and arrange appropriate follow-up
- If not getting social security payment — suggest she see Centrelink agent

Make sure baby's 6-8 week postnatal check has been arranged ([p231](#)).

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
 - Does not interact spontaneously, unmotivated
 - 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

Ask

- How is woman feeling emotionally
 - May be hard for woman to tell a stranger. Help her feel comfortable, give her plenty of time to build trust and relationship, may take several visits
 - Explain that you ask every pregnant woman and new mum these questions, to help you work out if she needs extra support
 - Let her talk freely about her situation, reassure, validate her feelings
- About risk factors
 - Past or present mental health problems
 - Have you ever had a period of 2 weeks or more when you have felt really down or stressed
 - Have you ever had treatment for a mental health problem before (eg depression, anxiety, bipolar, psychosis)
 - Has anyone in your close family had mental health problems
 - Past or current physical, sexual, psychological abuse
 - When you were growing up, did you always feel safe and cared for
 - Do you feel safe and cared for with your current partner
 - Current drug or alcohol use
 - Do you or others think that you (or your partner) have a problem with alcohol, drugs, other substances
 - Recent life stressors
 - Has 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 including overcrowding, pregnancy loss
 - How did you cope with this



- Quality of attachment to mother
 - Ask who grew the woman up, may not have been her biological mother. Mother or grandmother may be from the stolen generation, might have affected attachment to their caregivers and led to difficulties in attachment to their own babies — ongoing generational attachment difficulties
 - When you were growing up was your mother (or main caregiver) loving and supportive of you
- Practical and emotional support. Consider current relationship or pregnancy — is it 'right skin', is woman living in her own or different community/clan, is partner supportive
 - If you found yourself struggling to cope, who could give you practical and emotional support

Check

- Do clinical assessment to exclude physical causes (*CPM p94*)
 - Take blood for FBC, UEC, BGL, LFT, TFT, iron studies
- Current medicines
- **Edinburgh Postnatal Depression Scale (EPDS)** (*p224*)
 - 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, third trimester of pregnancy, mother's 6-8 week postnatal check, 6 months after birth
 - 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.

- EPDS not diagnostic. If mental health issues indicated — further mental health assessment needed
 - **Medical/mental health consult**
- If immediate risk to mother or baby — develop short-term safety plan
- Offer treatment for medical conditions that may be causing some of her symptoms — anaemia, iron deficiency, thyroid problems

- 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 (*CPM p128*)
- Medicines may be needed for women with severe symptoms or risk
 - Potential for harm to fetus or breastfed baby must be balanced with harm to woman or child if she remains untreated
 - **Medical/mental health consult**
 - 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**

Scoring EPDS

Add scores for the marked items for total score. See *EPDS scoring guide (p225)*.

- 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 (*p222*), repeat EPDS in 2 weeks
- 13 or more — likelihood of depression high
 - Treat as needed (*p222*)

If positive answer to Q10 — always do suicide risk assessment straight away (*CARPA STM p207*).

<p>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. Here is an example already completed: I have felt happy: () Yes, all of the time (x) Yes, most of the time () No, not very often () No, not at all This would mean: <i>I have felt happy most of the time during the past week.</i> Please complete the other questions in the same way.</p>	
<p>In the past 7 days</p>	
<p>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</p>	<p>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</p>
<p>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</p>	<p>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</p>
<p>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</p>	<p>8. I have felt sad or miserable: () Yes, most of the time () Yes, quite often () Not very often () No, not at all</p>
<p>4. I have been anxious or worried for no good reason: () No, not at all () Hardly ever () Yes, sometimes () Yes, very often</p>	<p>9. I have been so unhappy that I have been crying: () Yes, most of the time () Yes, quite often () Only occasionally () No, never</p>
<p>5. I have felt scared or panicky for no good reason: () Yes, quite a lot () Yes, sometimes () No, not much () No, not at all</p>	<p>10. The thought of harming myself has occurred to me: () Yes, quite often () Sometimes () Hardly ever () Never</p>
<p>TOTAL SCORE:</p>	

EPDS scoring guide

<p>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</p>	<p>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</p>
<p>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</p>	<p>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</p>
<p>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</p>	<p>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</p>
<p>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</p>	<p>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</p>
<p>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</p>	<p>10. The thought of harming myself has occurred to me: (3) Yes, quite often (2) Sometimes (1) Hardly ever (0) Never</p>
<p>TOTAL SCORE:</p>	

Newborn screening test

Used to screen babies for rare genetic metabolic or endocrine conditions, needing further clinical evaluation. Usually done in hospital.

Do

- Explain and demonstrate procedure
 - If parents decline to have infant screened —
 - Record in baby's file notes
 - Complete and return screening collection card, record reason for non-collection on card

Document

- Fill out all details on screening collection card using pen before starting test
- If test a repeat collection — write 'repeat' on card
- **Do not** touch circle area on card, contamination of sample may occur
- Record collection on 'Examination of the Newborn' page on baby's chart (if first test), and in baby's file notes
 - Record card number in baby's file notes
- Detection of galactosaemia depends on type of feed baby had before test. Record on card — breastfeed only, bottle-feed only, mixed feed

Perform test

- Blood ideally collected 48–72 hours after birth (collect after 72 hours if missed)
- Collect equipment — screening collection card, gloves, sterile lancet (point not more than 2.4mm), cotton wool ball or gauze, small sticking plaster
- Wrap baby securely. Have parent hold or breastfeed baby so baby relaxed
- Make sure heel is pink and warm so blood flows easily — keep lower than body
- If heel cold and blood won't flow — warm with warm water
- Pressing firmly against skin before pricking may help blood flow
- Clean heel with damp cotton wool ball, allow to dry completely
 - Tests unreliable if contaminated with water, faeces, talc, urine etc
- Prick on inside or outside edge of heel on bottom (plantar) surface of foot — F 5.6. Use downward side of heel
- **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 — correct side marked on card
- Put drop on centre of circle, allow to spread by itself. Circle usually not filled with first drop. Put more drops in centre of circle and let spread, until circle completely filled
 - **Do not** let blood dry between drops
 - Only fill from correct side as marked on card



5.6

- Turn card over to check circle full on both sides
- Completely fill circle before moving to next
- Fill other circles the same way. All 4 circles must be completely filled

Dry and send card

- Card needs to be air dried for at least 4 hours at room temperature (not more than 30°C) away from 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 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 pathology lab address on card as soon as possible.**

Follow-up

- Only abnormal results reported. If significant abnormal results — clinician recorded on card contacted by phone. **Medical consult**

Postnatal care of baby

For immediate care of baby after birth — see *Newborn resuscitation* (p70), *Newborn needing special care* (p76), *Care of normal newborn for first 24 hours* (p184).

Check baby and mother every day for 5 days, then as needed until baby's 6–8 week postnatal check (p231), mother's 6–8 week postnatal check (p219).

Check file notes and birth record

- Locate hospital discharge summary
- Check neonatal hearing test done in hospital — if not done, contact local maternity unit about catch up test
- Check baby's birth immunisations. If **hepatitis B** or **BCG immunisations** not given — **medical consult**
 - **BCG immunisation** usually arranged through CDC/PHU

Some babies at extra risk of getting sick in first few days of life, even if well at birth. See *Newborn needing special care* (p76).

Ask mother about baby

- Feeding, sleeping, wet and dirty nappies, activity level, any other concerns

Check baby

Normal observations

- Temp — 36.5–37.5°C under arm
 - Heart rate — 110–160 beats/min
 - RR — 30–60 breaths/min
- Alertness
 - Temp under arm (axillary)
 - Colour, heart rate (use stethoscope), RR when baby quiet
 - Look carefully for signs of breathing problems, even if normal RR
 - Nasal flaring, chest in-drawing, apnoea (stops breathing for more than 15 seconds)
 - Noises with breathing — grunting, stridor, wheeze
 - Difficulty feeding
 - Fontanelles — sunken or bulging
 - Eyes — discharge, redness, white of eye yellow (jaundiced)
 - Mouth
 - Thrush — white patches that don't wipe away with cotton bud
 - Tongue and/or lip tie
 - Skin — colour, skin folds, cleanliness, nappy area for rash

- Weight — at birth, day 3, day 5, every 2 weeks until 6 weeks
 - Baby may lose up to 10% (no more) of birth weight by day 3. Should be gaining weight on day 5, back to birth weight by day 7–14
 - From then on, should be a steady weight gain following a smooth curve on growth chart (*CARPA STM p158*)
 - Plot baby's weight on a growth chart at least every 2–4 weeks
- Moves arms and legs equally on both sides
- Umbilical cord or umbilicus — red, infected, bleeding
- Mother's interaction with baby, signs of perinatal depression (*p221*)
- Any odd (dysmorphic) features
- Urine — 6 or more wet nappies each day
- Faeces — changing from dark green to yellow paste, frequency variable
 - Lack of faeces in breastfed babies not a concern, if no other signs of illness or distress. Breastfed babies may pass faeces from several times a day to none for up to 5 days
 - Carefully monitor bottle-fed babies. If baby appears constipated — check how formula being mixed (*p234*)

Do

- Do newborn screening test (*p226*) ideally 48–72 hours after birth
- Tell mother when next set of immunisations for baby due
- Talk with woman about feeding methods
 - Encourage and support breastfeeding (*p199*)
 - If baby bottle-fed — talk with mother or carer about equipment, formula feeding (*p236*), need for frequent checks at clinic
 - See *Infant feeding guidelines* (*p234*)
- Talk with woman about cord care — put nothing on stump, fold nappy below stump, wash and dry stump if it gets soiled
- Start growth chart (*CARPA STM p156*) (if not already done) — record on day 3, day 5, then every 2 weeks
- If mother had history of substance misuse during pregnancy —
 - Watch for signs of withdrawal in first few days (eg irritable, jittery, high pitch cry)
 - Baby may need supportive care and medicines
 - Arrange paediatrician review and development assessment
- If mother a smoker — suggest
 - If she smokes — not to smoke around baby, children
 - Not to smoke just before or while breastfeeding
 - Avoid other people's smoke
 - Try to make home a smoke-free place
 - Have place outside for smokers, away from children's play and sleeping areas



- Advise to return to clinic if baby
 - Not feeding well
 - Has difficulty breathing
 - High temperature
 - Any other concerns
- If any concerns about baby or mother — **medical consult**
- Check baby at least weekly until 6–8 week postnatal check ([p231](#))
 - If worried that mother or baby medically or socially 'at risk' — keep regular contact with mother, review baby more than once a week
- All babies need review by doctor at 6 weeks of age
 - If baby born in community — make sure baby has full medical examination at next doctor visit

Baby's 6–8 week postnatal check

Purpose of check

- Assess how baby and mother are adapting to life together
- Check baby is growing and developing normally
- Listen to parents' concerns and answer any questions
- Risk assessment for issues that might influence baby's and/or mother's wellbeing ([p232](#))
- Health promotion and education

Before consultation

- Obtain and check birth information and hospital discharge summary
 - Check newborn screening test done ([p226](#))
 - Check if hepatitis B and BCG immunisations given at birth
 - Check immunisation database — may have been given at another community
- Plot birth weight, length, head circumference on growth chart
- If mother had positive syphilis serology — check baby's risk of congenital syphilis was assessed
 - If baby wasn't born in hospital — always do **medical/sexual health consult** about baby's risk
- If no neonatal hearing test — contact local maternity unit about catch-up test
- Check birth was registered, baby enrolled with Medicare
- Identify risk factors for abnormal development including
 - Difficult birth
 - Preterm birth, especially earlier than 32 weeks
 - Low birth weight, less than 2.5kg
 - History of meningitis
 - Substance use in pregnancy (eg alcohol, smoking, volatile substance misuse, drugs)

Consultation

- Do in quiet part of clinic when mother relaxed, baby contented. Hard to do useful examination on crying baby
- Involve mother — watch baby and mother interacting. Opportunity for health promotion, information sharing

Ask

- Baby's general health
- Feeding — breast or bottle, any problems
- Wet and dirty nappies
- Sleep
- Behaviour — is baby alert, interacting with people
- Mother's concerns about baby's behaviour, vision, hearing



Risk assessment

- Ask mother about
 - Previous child with growth issues and/or involvement with child protection services
 - Issues with infant weight gain or feeding difficulties
 - Conditions at home — family support, housing (eg access to food, water, sanitation)
 - Financial and social issues
 - Substance use including alcohol, smoking, other drugs, petrol sniffing
 - Domestic/family violence ([p324](#))
- Any concerns about mother — infant attachment, symptoms of perinatal depression ([p221](#))

Check

By any member of health care team

- Weight, length, head circumference — plot on growth chart ([CARPA STM p157](#))
- Does baby look normal
- Baby's behaviour and movements
 - Does baby interact appropriately with mother, baby may smile at this age
 - Does baby look at your face, try to follow when you move your head
 - Is baby's muscle tone normal — not floppy or stiff
 - Does baby move arms and legs equally on both sides
 - When lying face down, does baby lift up its head
- Ears ([CPM p158](#)) — otitis media, pus in ear canal, perforated eardrums
 - Use otoscope
- Skin ([CPM p266](#)) — sores ([CARPA STM p387](#)), scabies ([CARPA STM p394](#)), nappy rash ([CARPA STM p406](#))

By doctor, suitably qualified midwife or child health nurse

- Head to toe check, including
 - Eyes for red reflex
 - Heart sounds to detect any murmurs
 - Femoral pulses
 - Hips for developmental problems
 - In boys, can both testes be felt in scrotum

Do

- Show mother baby's growth chart, explain its purpose
- If any concerns about growth ([CARPA STM p151](#)) — **medical consult**
- Medical review for any abnormalities found in physical examination
- If social risk factors identified — **medical/allied health consult** about acute issues, additional support for family, plan for follow-up

- Provide health promotion and education about
 - Breastfeeding ([p199](#)) and infant feeding ([p234](#))
 - How to sleep baby safely and reduce risk of SIDS ([p196](#))
 - Injury prevention
 - Immunisations
- Offer 6–8 week immunisations
- Advise to return to clinic if baby
 - Not feeding well
 - Has difficulty breathing
 - High temperature
 - Any other concerns

Make sure mother's 6–8 week postnatal check ([p219](#)) has been arranged.

Infant feeding guidelines

Birth to 2 years is critical period for optimal growth, health and development. Also peak period for growth problems, anaemia, common childhood illnesses.

Table 5.1: Feeding guidelines birth to 2 years

Introduce at	Key message	Fluids	Food
Birth to around 6 months	<ul style="list-style-type: none"> Breast milk has all nutrients needed Give oral iron supplement (<i>CARPA STM p116</i>) from 4 months in Indigenous populations 	<ul style="list-style-type: none"> Breast milk only – on demand <ul style="list-style-type: none"> No other food or fluids needed Protective antibodies to boost infant's immune system 	
Around 6 months – first foods	<ul style="list-style-type: none"> Babies need food in addition to breast milk First foods should be iron rich as infant's iron store is very low (depleted) Starting solids too early or too late can make the baby sick or grow slowly 	<ul style="list-style-type: none"> Offer food before breast milk Clean cool boiled water in a cup 	<ul style="list-style-type: none"> Give food at least 2–3 times a day in addition to breast milk Offer food before breast milk Offer around 2–3 spoonfuls increasing to ½ a cup (125mL) Thick, smooth texture foods rich in iron <ul style="list-style-type: none"> Iron-fortified cereal (eg <i>Farex</i> or <i>Weetbix</i>) with expressed breast milk or clean cool boiled water Soft mashed meat or eggs Soft mashed fruit and vegetables
As baby learns to eat and swallow solid food	<ul style="list-style-type: none"> Baby ready for lumpier textures which encourage chewing and speech development 	<ul style="list-style-type: none"> Offer food before breast milk Clean cool boiled water in a cup 	<ul style="list-style-type: none"> Give food at least 4–6 times a day Change texture from smooth to soft and lumpy <ul style="list-style-type: none"> Iron-fortified cereal (eg <i>Farex</i> or <i>Weetbix</i>) with expressed milk, clean cool boiled water or cow's milk* Soft meat, eggs Smooth peanut paste Soft fruits and vegetables Dairy products* (eg yoghurt, cheese) Finger foods <ul style="list-style-type: none"> Pieces of cheese or meat Pieces of fruit and cooked vegetables



Introduce at	Key message	Fluids	Food
12–24 months	<ul style="list-style-type: none"> • Infants should be eating a wide range of healthy family foods • Solid foods should now be providing most of baby's nutritional needs. 	<ul style="list-style-type: none"> • Offer food before breast milk • Clean water in a cup • Cow's milk in a cup* 	<ul style="list-style-type: none"> • 3 meals plus 1–2 snacks a day • Variety of foods that rest of family eating • Talk about importance of offering foods from each food group — refer to <i>Australian Guide to Healthy Eating</i>. Includes <ul style="list-style-type: none"> ◦ Meat, chicken, fish, eggs, baked beans ◦ Vegetables, fruits ◦ Bread, cereals — preferably wholegrain, iron enriched ◦ Dairy foods

*Do not use cow's milk as a **drink** before 12 months (OK with cereal or in dairy products such as yoghurt).

Do not add salt or sugar to food.

Breastfeeding

- Involve father — mother more likely to breastfeed if father supportive
- Help mother to
 - **Exclusively breastfeed for first 6 months** ([p199](#))
 - Only breast milk, no other foods or fluids, including water
 - Baby will feed on demand to meet fluid needs, even in hot weather
- Give oral iron supplement from 4 months ([CARPA STM p117](#))
- Provide good complementary foods from 6 months, continue breastfeeding throughout first year and beyond
- Suggest expressing and storing breast milk ([p200](#)) if
 - Mother away from baby for any reason
 - Baby already having some formula feeds. Mother may not have considered this option
- If formula feeds planned ([p236](#)) —
 - Advise mother that baby will benefit from still having some breastfeeds (eg reduces chance of getting infections)
 - Reassure that it is fine to use both breast and formula feeding, if fully breastfeeding is not working out
 - Advise mother her supply of breast milk may be reduced if she feeds baby less
 - If help needed with breastfeeding — get advice from midwife or lactation consultant



Formula feeding

- Check correct formula is used
 - ‘Birth to 6 months’ appropriate for all infant age ranges unless a special formula is prescribed
 - Healthy infants don't need formulas advertised as ‘toddler’ or ‘supplementary formula’
- Sterilise all equipment and water for mixing formula until baby 12 months old
 - Boil tap water for 5 minutes for both equipment sterilisation and preparation of water for mixing with formula
 - If using electric kettle with automatic cut-off — after cut-off has activated, reset cut-off and boil again. About the same as boiling for 5 minutes
- **Do not** use water already used to sterilise equipment to prepare formula
- Infants need 150–200mL/kg of fluid a day until 6 months
 - Amount of milk and number of feeds needed varies between infants
 - Most young babies feed 3–4 hourly

Important points for preparing formula

Make sure parents/carers know how to mix formula correctly.

- Follow instructions on can exactly. Different brands have different sized scoops and amounts of water needed per scoop
 - **Do not** use different scoop, or add more or less scoops than instructed
- Fill scoop and level off top with clean knife
 - **Do not** pack down powder
- Use **cooled** boiled water. Mixes more easily, hot water can destroy vitamins and other nutrients
- Make up 1 bottle at a time as needed
 - **Do not** store prepared formula in door of fridge, must be stored at back
 - If not used within 24 hours — throw away

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STI checks for women

- If under 18 years — consent and child protection issues
 - If 14–18 years — first see *STI checks for young people* (p243)
 - If under 14 years — see *Child sexual abuse* (CARPA STM p146)
- STIs under-diagnosed — often missed as may have no symptoms or minor symptoms that clear quickly
- Times to do an STI check include
 - As part of another consultation (opportunistic), if 15–35 years
 - As part of Adult Health Check (CPM p123)
 - Community-wide screening
 - If symptoms and/or risk factors suggest STI
 - If asked for by person — even if not long since last check
 - All pregnant women
- Aim for 2 standard STI checks a year — use recall system
- STI checks routinely recommended in 15–35 year age group

Risk factors for STIs

- Living in community with high STI rates
- Age
 - High risk — sexually active under 35 years
 - Highest risk — sexually active under 19 years
- STI or PID in past 12 months
- New sexual partner in past 3 months, more than 1 partner in past 6 months
- Drug or alcohol use — increase of high-risk behaviours (eg multiple sexual partners, unsafe sex)
- Recent travel

Additional risk factors for HIV

- Existing STI
- Person or their partner is man who has sex with men, transgender/sistergirl, from overseas, person who injects drugs

Standard STI check

Full pathology testing, no detailed history or examination. Standard STI check replaces Brief STI check.

- Indications
 - Opportunistic
 - Adult Health Check (CPM p123), yearly STI check, community screening
 - 3 month re-test following a positive test result
 - 6 week postnatal check
- Ask about symptoms — abnormal vaginal discharge (p253), lower abdominal pain (CARPA STM p24), abnormal vaginal bleeding (p301), sores/ulcers (p256)
 - If symptoms — see relevant protocol

Sometimes there is not enough time or only some samples can be collected. It is still useful to do some tests from standard STI check.

Check

- Collect
 - Self-collected lower vaginal swabs x 2 ([p264](#))
 - *OR* first-void urine ([CPM p393](#))
 - *OR* if cervical screening due and/or doing speculum exam ([p272](#)) — endocervical swabs x 2 ([p274](#))
- Request
 - NAAT for chlamydia, gonorrhoea, trichomonas. If swab — *Aptima* or dry
 - Gonorrhoea culture. If swab — amies transport medium
- Take blood for HIV serology, syphilis serology
- If hepatitis B status unknown or not immune (no evidence of previous infection or immunisation) — HBsAg, Anti-HBc, Anti-HBs

Do

- Tell woman to come back for results

Follow-up

- If any positive result — do rest of full STI check (*below*) 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

- Symptoms — vaginal discharge, pain on passing urine, lower abdominal pain
- Asks for check
- If positive result from standard STI check ([p238](#)) — for additional assessment
- Contact (partner) of someone with an STI ([p250](#))

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, any abnormal bleeding
- Lower abdominal pain, pain with sex
- Vaginal discharge, itching, soreness
- Pain on passing urine

- Sore/s, rash, lump/s on genitals
- Sexual partners
 - Regular/casual partners, do partners have other partners
 - New partner in past 3 months
 - Number of partners in past 6 months

Check

- Rash (including hands and feet), 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* (p256)
- Offer urine pregnancy test (p279), especially if no record of contraceptive use
 - If positive and woman has symptoms of STI — **medical consult**, see *STI management for women* (p245)

Collect

- All women
 - Self-collected lower vaginal swabs x 2 (p264)
 - *OR* first-void urine (CPM p393)
 - *OR* if cervical screening due and/or doing speculum exam (p272) — endocervical swabs x 2 (p274)
 - Send for
 - NAAT for chlamydia, gonorrhoea, trichomonas. If swab — *Aptima* or dry
 - Gonorrhoea culture. If swab — amies transport medium
 - If abnormal discharge — MC&S from low or high vaginal swab
- All women — take blood for HIV serology, syphilis serology
- If genital sore — swab base of ulcer (sore, scab, lump) or fluid from blister (CPM p391)
 - Request — NAAT for herpes, syphilis, donovanosis
- If hepatitis B status unknown or not immune (no evidence of previous infection or immunisation) *AND* all pregnant women — HBSAg, Anti-HBc, Anti-HBs

Do

- If symptoms of STI — offer immediate syndromic treatment
 - If discharge — see *Abnormal vaginal discharge* (p253)
 - If sores, ulcer — see *Genital ulcers and lumps* (p256)
- In communities with high STI rates — consider immediate treatment even if no symptoms. Presumptive treatment. Treat for gonorrhoea (p245) (will also treat chlamydia) if
 - Woman asks for treatment or thinks she has put herself at risk

- 15–25 years with other risk factor/s (p238) and not treated in last 12 months
- At high risk and unlikely to return for results
- If symptoms of PID (eg lower abdominal pain, deep pain with sex) — see *Pelvic inflammatory disease* (p260)
- Offer STI and safer sex education (p252)
- Consider talking about contraception (p335)
- Tell woman to come back for results
- Ask for name/s of partner/s for contact tracing if pathology positive (p250)

Follow-up

- If positive results — see *STI management* (p245)
- 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

- STIs in pregnancy can have serious consequences for mother and baby, including miscarriage, neonatal illness and death
- Testing, prompt management, and prioritised contact tracing are important

Table 6.1: Pregnancy and postnatal STI checks

Timing	Check	Comment
First antenatal visit	Pregnancy STI check	<ul style="list-style-type: none"> • Add hepatitis B serology, regardless of recorded status • If history of preterm birth — add MC&S for BV
28 weeks	Pregnancy STI check	If HIV tested earlier in pregnancy — don't repeat unless risk factors
36 weeks	Pregnancy STI check	Add GBS swabs
Birth	Syphilis serology	If STI status unknown — do pregnancy STI check
6 weeks postnatal	Standard STI check	Always include syphilis serology

Pregnancy STI check

Ask

- Always ask about symptoms — abnormal vaginal discharge (p253), lower abdominal pain (*CARPA STM* p24), abnormal vaginal bleeding (p301), sores/ulcers (p256)
 - If symptoms — see relevant protocols
- If history of herpes — see *Genital herpes – Do in pregnancy* (p258)



Check

- If speculum exam not being done — check vulva and vagina for sores, scars, abnormalities at first visit
- Collect
 - Lower vaginal swabs x 2. Best collected by clinician at first visit, otherwise self-collected ([p264](#))
 - *OR* first-void urine ([CPM p393](#))
 - *OR* if cervical screening due and/or doing speculum exam ([p272](#)) — endocervical swabs x 2 ([p274](#))
- Request
 - NAAT for chlamydia, gonorrhoea, trichomonas. If swab — *Aptima* or dry
 - Gonorrhoea culture. If swab — amies transport medium
- Take blood for HIV serology, syphilis serology
- If genital sore/s —
 - 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* ([p256](#))

Do

- If any positive results from pregnancy STI check — do rest of full STI check ([p239](#))

STI checks for young people

Sexually-active young people are at high risk of STIs and generally under tested.

- Actively screen sexually active young people for STIs, even in 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 Flowchart 2.4 ([CARPA STM p149](#))

- If you suspect sexual abuse or reportable sexual activity, as defined by your state/territory legislation — **medical consult**
 - You **must** notify child protection
 - Doctor will advise about STI testing. Doctor may talk with child protection service or sexual assault referral centre

• Before testing

- If under 16 years — you must obtain consent from parent/carer or assess whether to treat as competent minor ([CPM p102](#))
- Explain importance of doing STI test
 - Most STIs are easily treatable
 - Health consequences of STIs
- Explain need to report to child protection service if
 - Under certain age (defined by state/territory legislation)
 - Positive result depending on age (defined by state/territory legislation)
 - Safety concerns
- 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

Check

- If 14 years or over and issues of consent and child protection have been addressed — offer standard STI check ([p238](#))
 - If not able to obtain consent, or unresolved child protection issues — **medical consult** before testing
- If under 14 years — **medical consult**

Do

- After doing STI check
 - Tell young person to come back for results
 - Discuss
 - Safer sex ([p252](#)) and offer condoms
 - Contraception ([p335](#))
 - Treatment if positive result
- Report any identified issues to child protection service
 - **Do not** wait for STI results before you report

Follow-up

- If under 14 years and positive STI result —
 - Repeat notification to child protection service
 - **Medical consult** about
 - Contraception ([p335](#))
 - Treatment
 - Contact tracing — may find other young people at risk of STIs, child protection issues
- 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 ([p239](#))
 - See *STI management* ([p245](#))

STI management for women

- Get help and advice from local ATSIHPs, health council, respected community members about doing STI work in culturally sensitive way
- Offer treatment as soon as possible to prevent complications, stop spread
- If person has symptoms/syndromes likely to be caused by STI, or has put themselves at risk — treat straight away. **Do not** wait for laboratory or POC test results. See individual protocols
 - *Genital ulcers and lumps* (p256)
 - *Abnormal vaginal discharge* (p253)
 - *Pelvic inflammatory disease* (p260)
- Treat people with positive pathology and named partners/contacts as soon as possible
- If positive result on standard STI check or individual test — do remaining checks to complete full STI check (p239)
- If pregnant woman has positive STI test **AND** previous premature rupture of membranes, preterm labour, or low birth weight baby (under 2.5kg) — refer to obstetrician as soon as possible
 - May need additional monitoring, tests, treatment

Positive pathology results

Chlamydia

- Notifiable disease. Follow local protocols, check with sexual health unit if more information needed
- If woman has positive test result — always ask about symptoms of PID
 - Lower abdominal pain not a normal symptom of uncomplicated chlamydia

Do

- Give **azithromycin** oral single dose – adult 1g
- Contact trace (p250) 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 (p252)
- Consider talking about contraception (p335)

Follow-up

- Re-test in 3 months — standard STI check (p238)
- 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 and treatment of woman and partner/s

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 ([p260](#))
 - Lower abdominal pain not a normal symptom of uncomplicated gonorrhoea

Do

- If person and **all** partners for last 3 months from geographical area with penicillin sensitive gonorrhoea (Table 6.2) —
 - Give **azithromycin** oral single dose – adult 1g
 - **AND amoxicillin** oral single dose – adult 3g
 - **AND probenecid** oral single dose – adult 1g
 - If allergic to penicillin — **sexual health consult**
- If person and/or **any** partner for last 3 months from geographical area with penicillin resistant gonorrhoea (Table 6.2) *OR* partners unknown —
 - Give **azithromycin** oral single dose – adult 1g
 - **AND ceftriaxone** IM single dose – adult 500mg mixed with 2mL **lidocaine (lignocaine) 1%**
- If oropharyngeal or anal gonorrhoea — regardless of geographical area
 - Give **azithromycin** oral single dose – adult 1g
 - **AND ceftriaxone** IM single dose – adult 500mg mixed with 2mL **lidocaine (lignocaine) 1%**
- Contact trace ([p250](#)) 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 ([p252](#))
- Consider talking about contraception ([p335](#))

Table 6.2 Geographical treatment areas for gonorrhoea

Type of gonorrhoea	Geographical area
Penicillin sensitive	<ul style="list-style-type: none"> • All of the NT outside of Darwin • The Kimberley, Goldfields, Midwest and Pilbara regions of WA
Penicillin resistant	<ul style="list-style-type: none"> • Darwin • All other areas except those mentioned above
NT communicable disease bulletins will advise if changes to these areas.	

Follow-up

- Re-test in 3 months — standard STI check ([p238](#))
- 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 and treatment of woman and partner/s

Genital herpes

- See *Genital ulcers and lumps* (p256)

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 once a week for 4 weeks – adult 1g
- Check sore/s each week when giving medicine
 - If not healed after 4 weeks — **medical consult**
 - Continue **azithromycin** oral once a week until healed – adult 1g
 - If not improving — may need biopsy for cancer
- Contact trace (p250) and treat partner/s with 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 (p252)
- Consider talking about contraception (p335)

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, 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 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, congenital syphilis in baby



Primary syphilis

- 1 or 2 painless ulcers — called chancres
- Usually red, round with firm rolled edge, base clean
- Sore goes away in 4–6 weeks without treatment, but syphilis still in blood

Secondary syphilis

- Fleshy, moist, wart-like lesions in genital or perianal area — called condylomata lata
- May also have
 - Skin rashes, especially palms of hands, soles of feet
 - Hair loss including outer eyebrow, beard
 - Swollen lymph glands all over body

Tertiary syphilis

- Dementia, change in personality
- Shooting pain, numbness, pins and needles
- Weakness of hands, arms, legs, unusual way of walking (gait)
- Problems with nerves of head and face (cranial nerve palsy), abnormal pupil reactions
- Deafness that is new
- Eye problems (eg retinal disease, uveitis, iritis)
- Heart valve weakness (aortic incompetence)
- Widening (dilation) of ascending aorta on x-ray or echocardiogram

Check

- Take blood for syphilis serology just before starting treatment so accurate pre-treatment/baseline RPR level

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 penicillin (penicillin G)** IM single dose — adult 1.8g (2 x 900mg vials)
 - If allergic to penicillin — **sexual health consult**
- If unknown or known to be more than 2 years —
 - Give **benzathine penicillin (penicillin G)** IM once a week for 3 weeks — adult 1.8g (2 x 900mg vials)
 - If more than 7 days between injections — talk with sexual health unit or syphilis register. May need to start course again
 - If allergic 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 ([p250](#)) and give partner/s same treatment. Very important if newly infected, get advice from sexual health unit
- Offer condoms but advise better not to have sex for 7 days after person and partner/s treated
- STI and safer sex education ([p252](#))
- Consider talking about contraception ([p335](#))

If recent syphilis — often harmless febrile reaction to treatment (Jarisch-Herxheimer). Starts in 3–4 hours, gets better within 24 hours.

- Give **paracetamol** up to 4 times a day (qid) – adult 1g ([CARPA STM p380](#))

Follow-up

- Check syphilis serology again 6 months and 12 months after base line RPR and first treatment
- Advise syphilis register of treatment given — ask local PHU for number

Pregnancy considerations

Medical consult. This is an 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.
- High priority for contact tracing ([p250](#)) and coordinated treatment for woman and her contact/s

Trichomonas

- Notifiable disease in the NT. Follow local protocols, check with sexual health unit if more information needed

Do

- Give **metronidazole** oral single dose – adult 2g
- *OR* **metronidazole** oral twice a day (bd) for 5 days – adult 400mg. Best for breastfeeding, take after baby fed
- *OR* **tinidazole** oral single dose – adult 2g. Not if pregnant or breastfeeding
- Contact trace ([p250](#)) 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 ([p252](#))
- Consider talking about contraception ([p335](#))

Follow-up

- Re-test in 3 months — standard STI check ([p238](#))
- Check HIV and syphilis serology done

Pregnancy considerations

- If asymptomatic consider delaying treatment until after first trimester
- Treatment same as for non-pregnant women



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

Do

- Follow advice from sexual health unit and local protocols where appropriate
- Continued involvement of primary care services is important — usually involves
 - Managing and monitoring antiretroviral medicines
 - Contact tracing and management of contacts (*below*)
 - STI and safer sex education ([p252](#))

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 —
 - **Medical consult** straight away. **Urgent referral** to HIV/AIDS 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
- Elective Caesarean section may be recommended
- Talk with HIV/AIDS specialist at CDC/PHU about individual breastfeeding plan

Non STI results

- If MC&S results report thrush (candida) or BV — see *Abnormal vaginal discharge* ([p253](#))

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 or use condoms for 7 days after index and contact/s treated
- 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

- 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

Check

- Do full STI check – men ([CARPA STM p272](#)), women ([p239](#))

Do

- Treat straight away as per Table 6.3 without waiting for laboratory or POC test results — even if STI check declined
- STI and safer sex education ([p252](#))

Table 6.3: 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
All other conditions	See protocols for contact treatment if needed



Education

- Not needed with every sexual health check
- Best for people asking for test, or with STI needing treatment

STIs

Tell person

- What STIs are, why they matter, how to protect themselves
- How you get one, signs and symptoms, asymptomatic infection
- Need to test for reinfection in 3 months
- Get STI check
 - If under 35 years — aim for 2 standard STI checks a year
 - Straight away if they have unsafe sex, symptoms of an STI
- Important to treat sexual partner/s from past 3 months
 - To prevent reinfection — no sex or use condoms for 7 days after person and partner/s 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

- 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

Condoms

- Only contraceptive method that protects against STIs
- Show them how to use a condom ([p356](#))
- Offer condoms to take away, talk about where they can get more

Abnormal vaginal discharge

- Vaginal discharge can be normal
- Abnormal when increased amount, changed colour, smell, soreness, itch
 - Caused by range of infectious and non-infectious conditions
 - Common — gonorrhoea, chlamydia, trichomonas, thrush (candida), bacterial vaginosis, atrophic vaginitis
 - Less common — *Mycoplasma genitalium*, herpes simplex, foreign body (eg retained tampon), cancer
- STIs common in women with risk factors (p238)
- If pregnant — consider ruptured membranes, intrauterine infection

Ask

- Discharge — amount, colour, smell, 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* (p260)
- Other STI symptoms — swollen lymph nodes, genital lumps, ulcers, sore throat, rash, hair loss
- Sexual partner/s — any from geographical area with penicillin-resistant gonorrhoea (Table 6.2 p246)

Check

- Do full STI check (p239)
- Urine pregnancy test if not sure (p279)
- pH test if available — before putting into transport medium, touch sample on swab onto pH paper
 - Test unreliable if woman post-menopausal, semen or blood present

Do

- 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 single dose – adult 2g
 - **OR tinidazole** oral single dose – adult 2g. **Not** if pregnant or breastfeeding
 - **OR metronidazole** oral twice a day (bd) for 5 days – adult 400mg. Best for breastfeeding, take after baby fed
- Contact tracing — telling partners (p250)
- STI and safer sex education (p252)
- Consider talking about contraception (p335)
- Consider thrush (p254)

Do — if high risk of STI**High risk of STI**

- Women with abnormal vaginal discharge and 35 years or under
 - Women with cervical discharge or inflamed/friable (bleeds easily) cervix on speculum examination
- 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 geographical area with penicillin-sensitive gonorrhoea (Table 6.2 [p246](#)) —
 - Give **azithromycin** oral single dose – adult 1g
 - **AND amoxicillin** oral single dose – adult 3g
 - **AND probenecid** oral single dose – adult 1g
 - If woman and/or **any** sexual partner in last 3 months from geographical area with penicillin-resistant gonorrhoea (Table 6.2 [p246](#)) **OR** partners unknown —
 - Give **azithromycin** oral single dose – adult 1g
 - **AND ceftriaxone** IM single dose – adult 500mg mixed with 2mL **lidocaine (lignocaine) 1%**
 - If allergic to penicillin or pregnant — **medical/sexual health consult**

Follow-up

- Review after 1 week — test results, response to treatment, further education
- If no improvement with treatment —
 - Consider foreign body (eg tampon, condom)
 - **Medical/sexual health consult**
- If STI results positive — see *STI management* ([p245](#))
 - 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 ([p238](#))

Thrush (candidiasis)

- Usually caused by *Candida albicans*
- Not sexually transmitted, 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 vagina walls
 - Very red inflamed vulva and vagina

Do

- Talk with woman about keeping genital area clean and dry, salt water washes, wearing cotton underwear
- Give **clotrimazole** vaginal pessary single dose – 500mg
- **OR miconazole 2%** cream for 7 days
 - If pregnant — put in with finger not applicator
- If not better — **medical consult** about **fluconazole** oral single dose – adult 150mg. **Not** if pregnant or breastfeeding
- If woman has diabetes — try to improve blood glucose control

Follow-up

Some women get recurrent thrush even when well *BUT* if recurrent or persistent thrush — important to check for diabetes, weakened immune system.

- Do BGL
- Offer HIV serology
- **Medical consult** about further tests. Consider *Candida glabrata*

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 — causes high pH
- Can cause abnormal vaginal discharge and unpleasant odour
- Not sexually transmitted, 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 —
 - If symptomatic —
 - Give **metronidazole** oral single dose – adult 2g
 - Make sure standard STI check done ([p238](#))
 - If asymptomatic —
 - **AND** not pregnant or pregnant with no history of preterm labour — **do not** treat
 - **AND** pregnant with history of preterm labour — **medical consult** about management plan
- If still symptoms after initial single dose treatment —
 - Give **metronidazole** twice a day (bd) for 5 days – adult 400mg
 - Advise women to avoid douching (cleaning inside vagina)
- No follow-up needed

Genital ulcers and lumps

Causes

- Herpes — most common
- Syphilis
- Donovanosis — rare
- Genital warts
- Bartholin's cyst ([p306](#))
- Molluscum contagiosum ([CARPA STM p391](#))
- Local injury from scratching (eg scabies, lice, bad thrush)
- Cancer
 - If not better after 4 weeks — medical review, may need biopsy to exclude cancer

Ask

- How long have they had sores, are they getting worse
- Sores like these before
- Are sores painful
- Does sexual partner/s have sores

Check

- Do full STI check – women ([p239](#)), young person ([p243](#)). Must include syphilis serology
- If woman with no reliable contraception — do urine pregnancy test ([p279](#))
- Swab sores ([CPM p391](#)) — NAAT for herpes, syphilis, donovanosis
- Type of sore

Do

- Treat straight away — **do not** wait for test results
 - If multiple, recent small painful blisters (vesicles) — treat as herpes ([p257](#))
 - All other genital sores or ulcers — treat as syphilis and donovanosis ([p257](#))
- STI and safer sex education at first visit ([p252](#))
- Consider discussing contraception ([p335](#))
- Explain that having sex before sores healed completely may delay healing and give infection to partner/s
 - Offer condoms but advise better not to have sex

Follow-up

- Review at 1 week
 - Check if symptoms resolved
 - If sore/s not healed, no cause found — **medical consult**, add recall for 4 week review

Syphilis and donovanosis

Check

- Take blood for syphilis serology just before starting treatment so accurate pre-treatment/baseline RPR level

Do

- Give **benzathine penicillin (penicillin G)** IM single dose – adult 1.8g (2 x 900mg vials) — to start treatment for syphilis
 - If allergic to penicillin — **sexual health consult**
- **AND azithromycin** oral single dose – adult 1g — to start treatment for donovanosis
- Contact tracing ([p250](#)). Very important if you suspect new syphilis infection, get advice from sexual health unit
- STI and safer sex education ([p252](#))

If recent syphilis — often get harmless febrile reaction to treatment (Jarisch-Herxheimer). Starts in 3–4 hours, gets better within 24 hours.

- Give **paracetamol** up to 4 times a day (qid) – adult 1g ([CARPA STM p380](#))

Do — if pregnant

- **Medical consult.** This is an STI emergency

Follow-up

- Review at 1 week
 - Check test results. If any positive — see *STI management for women* ([p245](#))
 - If ulcer not healing and tests negative — **medical consult**, 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

Do

- Keep sores clean with **normal saline** washes
- Give **pain relief** ([CARPA STM p377](#)), can put **lidocaine (lignocaine) gel** on sores
- If kidney disease — **medical consult**. May need lower doses of antivirals

First episode

Can be severe, last 2–3 weeks.

- Medicines most helpful if blisters present for 3 days or less
 - Give **valaciclovir** oral twice a day (bd) for 5–10 days – adult 500mg

- Review at 1 week
 - Positive herpes NAAT confirms genital herpes. Negative herpes NAAT doesn't exclude genital herpes — ask to return for another swab if sores come back

Recurrent episodes

Usually less severe, last 1 week or less.

- Medicines most helpful if given before or on first day blisters appear
 - Give **valaciclovir** oral twice a day (bd) for 3 days – adult 500mg
 - *OR* **famciclovir** oral twice a day (bd) for 1 day – adult 1g
- 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
 - Some women 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 **aciclovir** oral 3 times a day (tds) for 5–10 days – adult 400mg
- If recurrent episode — give **aciclovir** oral 3 times a day (tds) for 5 days – adult 400mg
- If severe episode — **medical consult**, send to hospital for **aciclovir IV**
- Advise woman with no history of herpes but whose partner has history of herpes to avoid 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 fetal monitoring and instrument delivery

Genital warts

- Painless, solid lumps with hard smooth surface or cauliflower-like appearance. May look like secondary syphilis (condylomata lata)

Do not

- **Do not** treat as genital warts until secondary syphilis excluded
- **Do not** give podophyllotoxin if woman is or could be pregnant, is breastfeeding

Do

- Give **podophyllotoxin 0.5% solution** or **0.15% cream** 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 medicine
 - Use cotton swab or applicator for lotion
 - Glove best for cream but can use finger
 - Wash hands straight away
 - Only put on wart, can burn skin and cause ulcers
- *OR* give **imiquimod 5% cream** to apply once a day at night, 3 times a week for up to 16 weeks
 - OK to use if pregnant
 - Always show how to put on medicine
 - Use cotton swab or applicator
 - Wash hands straight away
 - Wash off with soap and water in morning or 6–10 hours after applying
 - Review weekly
- If not improving — **medical/sexual health consult** about other treatments
- If warts large, inside vagina, lot of warts — refer for freezing (cryotherapy)

Pelvic inflammatory disease

Inflammation of part or all of female upper genital tract.

- Diagnosed through clinical history and examination
- Always suspect if new onset pain and young age
- Unlikely after 12 weeks pregnant, but can cause miscarriage if not treated

Common cause of lower abdominal pain in non-pregnant women at high risk of STIs (15–35 years). Often missed. Can cause serious problems.

Decision to manage as PID is based on clinical assessment even if laboratory or POC test results negative.

Ask and check file notes

- Age — higher risk if 15–35 years
- History of STIs, PID, ectopic pregnancy, urinary infections
- Recent operations on genital tract
- Recent childbirth
- Date and results of last STI check, 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
- Vaginal discharge — amount, colour, smell, how long
- Urinary problems — pain, frequency, blood in urine
- IUD

Check

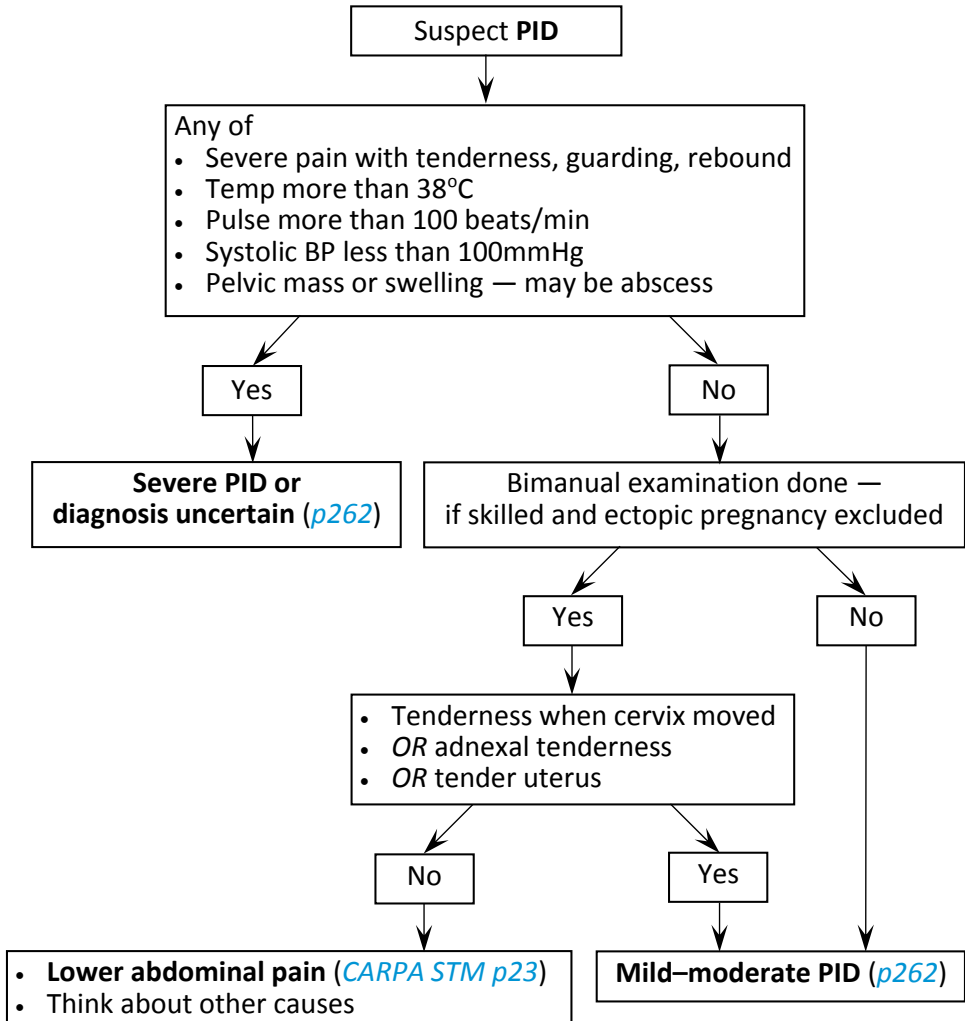
- Temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#))
- Do full STI check ([p239](#))
- Urine pregnancy test ([p279](#))
- If urinary symptoms or pregnant — midstream urine for MC&S
- If pregnant but gestation unknown — feel for uterus above pubic bone
 - If not felt, usually less than 12 weeks pregnant — consider ectopic pregnancy ([p16](#))
- See *Lower abdominal pain* ([CARPA STM p24](#)) for other causes of pain

- Bimanual exam, if skilled and ectopic pregnancy excluded ([p278](#))
 - If pregnant — **medical consult** first

Do

- If pregnant — **medical consult** about diagnosis, treatment, sending to hospital
- If not pregnant — follow Flowchart 6.1

Flowchart 6.1: Suspected PID in non-pregnant woman



Do — if severe PID or diagnosis uncertain

- **Medical consult**, send to hospital
- Put in IV cannula (*CPM p84*)
 - Start **normal saline** 1L at 125mL/hour or as directed by doctor
 - Take blood for FBC and blood culture, send in with woman
- Give **ceftriaxone** IV single dose – adult 2g. If no IV access give IM — 2 x 1g vials, each mixed with 3.5mL **lidocaine (lignocaine) 1%** and injected into separate buttocks, not more than 1g in each buttock
- **AND azithromycin** oral single dose – adult 1g
- **AND metronidazole** IV single dose – adult 500mg
- **Do not** let woman eat or drink anything — may need operation
- Ask about names of contacts if possible (*p250*)

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 single dose – adult 500mg mixed with 2mL **lidocaine (lignocaine) 1%**
- **AND doxycycline** oral twice a day (bd) for 14 days – adult 100mg. **Do not** use if pregnant
 - **OR azithromycin** oral single dose – adult 1g — second dose 1 week later
- **AND metronidazole** oral twice a day (bd) for 14 days – adult 400mg
- If pain relief needed — give
 - **Paracetamol** up to 4 times a day (qid) – adult 1g (*CARPA STM p380*)
 - **OR paracetamol-codeine** oral up to 4 times a day (qid) – adult 500+30mg (*CARPA STM p381*)
- Contact trace (*p250*) and give partner/s syndromic treatment for gonorrhoea and chlamydia – men (*CARPA STM p286*), women (*p254*)
- STI and safer sex education (*p252*)
- Consider discussing contraception (*p335*)

Day 3

- Examine woman, ask if symptoms improving
- If improving — PID likely. Explain important to finish treatment, do contact tracing (*p250*)
- If not improving — **medical consult**, send to hospital

Day 8

- If using azithromycin — give **azithromycin** oral single dose – adult 1g

Day 14

- Reassess woman
- 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 of 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 ([p238](#))

Self-collected lower vaginal swabs (LVS)

Attention

- Used to test for
 - STIs
 - Vaginal infections such as thrush (candida)
 - Group B Streptococcus (GBS) in pregnancy
 - HPV for cervical screening in certain circumstances (p290)

What you need

- See Table 6.3 for swab types used for various samples and tests
- pH paper

Table 6.3: Sample and swab types for self-collected lower vaginal swabs

Sample type	Test (request)	Swab type
Lower vaginal swab	NAAT — chlamydia, gonorrhoea, trichomonas	<ul style="list-style-type: none">• <i>Aptima</i> swab and tube• OR dry swab — flocced if available
Lower vaginal swab	Gonorrhoea culture	<ul style="list-style-type: none">• Amies transport medium swab<ul style="list-style-type: none">◦ If delay in transport — use charcoal medium
Lower vaginal swab	MC&S — thrush, BV	<ul style="list-style-type: none">• Amies transport medium swab
Lower vaginal swab	HPV test	<ul style="list-style-type: none">• Swab supplied by laboratory
Combined lower vaginal and anal swab	MC&S — GBS	<ul style="list-style-type: none">• 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
 - Swab with transport medium (eg *Aptima*, amies)
 - Remove container, leave swab in original packet
 - **Do not** give container to woman
 - Dry swab — leave swab in original container, break seal
- Explain to woman she needs to
 - Have her legs apart — either
 - Sitting on toilet — F 6.1
 - Standing with 1 foot on toilet seat — F 6.2



6.1

- Give woman specific instructions for swabs needed
Note: 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



6.2

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 — F 6.3
 - If *Aptima* swab — do not touch notched handle below groove
 - Turn swab around once, leave in vagina, count to 10, remove
 - 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 (below)*
- Wash hands, return swabs to nurse or ATSIHP



6.3

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
 - 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

LVS for HPV test for cervical screening

Use **swab** provided by laboratory. Swab must be turned multiple times to collect an adequate sample.



Instructions for woman

- Take swab out of packet/container (numbered 3 if multiple tests)
- Put tip of swab about 2–4cm (length of 1–2 finger joint) inside vagina — F 6.3
 - Turn swab around vagina 6–8 times, remove
- Put swab back into packet/container
- Wash her hands, return swab to nurse or ATSIHP

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
- Request ‘HPV test’
 - Write ‘for cervical screening’ and give clinical indication (eg never screened, screening overdue by more than 2 years)
- Make sure swab container 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 — F 6.3
 - Turn swab around once, leave in vagina, count to 10, remove
- Put same swab about 2cm inside anus — F 6.4, F 6.5
 - Turn swab around once, leave in anus, count to 10, remove
- Put swab back into packet
- Wash her hands, return swab to nurse or ATSIHP



6.4



6.5

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

7 Gynaecology

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Introduction

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 Check also looks for problems like diabetes, high BP, and kidney problems

- 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 women who don't read well.

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 woman'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

- Carried out
 - To investigate breast symptoms (*p287*)
 - As part of Adult Health Check (*CPM p123*) if over 50 years and no mammogram (*p285*) in last 2 years

Talk with woman

- Normal changes in breast — thickening of tissue, tenderness before period
- **Abnormal changes**
 - Lumps
 - Nipple discharge
 - Change in size or shape of breast or nipple
 - 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, cover her from waist down

Look

With woman sitting up — look at

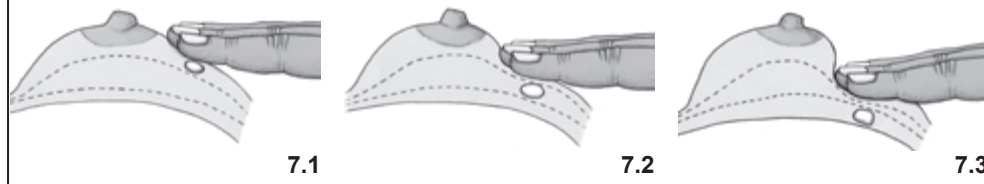
- Size — normal for breasts to be a little different in shape and size, but should be about the same
- Skin — dimpling ('orange peel' appearance), ulcers, sores, rashes
- Nipples — discharge, sores, turning inward (inversion)
 - Ask if inversion new or always been like that

Feel

- Feel for lumps in breasts and armpit
- Careful examination should take at least 3 minutes for each breast

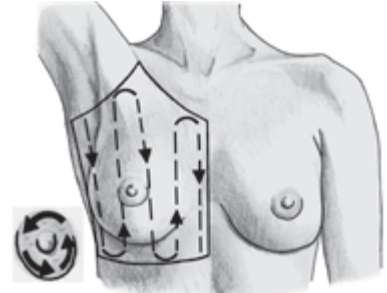
• Palpate using 3 pressures

- Make 3 circles with your finger pads, increasing the level of pressure with each circle — superficial — F 7.1, intermediate — F 7.2, then deep — F 7.3



- 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 (centralises nipple in breast)

- Using the 3 pressures, start in middle of armpit (axilla) and work down to bra line below breast. Work up and down in straight lines until whole breast has been checked — F 7.4
 - Make sure you feel carefully behind nipple — F 7.4
 - 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 of armpit. Ask about discomfort
 - Repeat on other side
- Draw diagram in file notes to show any abnormalities — F 7.5
- If abnormal findings — **medical consult**, see *Investigating breast problems (p287)*

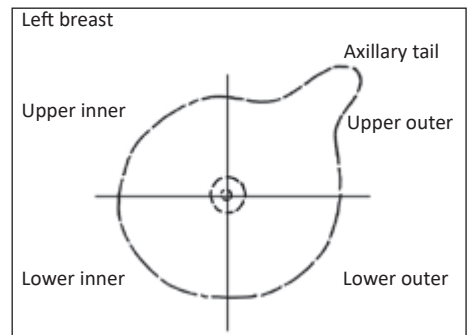


7.4

Follow-up

Encourage woman to be aware of her breasts. What is normal for her, check for changes.

- 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



7.5

Speculum examination and Cervical Screening Test

Speculum examination

Uses

- Cervical Screening Test (CST) ([p289](#)) — HPV test and reflex liquid based cytology (LBC) if needed
 - CST has replaced Pap smear
- STI checks for women ([p238](#))
- To investigate vaginal bleeding in pregnant ([p14](#)) and non-pregnant ([p301](#)) women
- Assessment of pregnancy complications
- Assessment of abnormal vaginal discharge

Do not do speculum exam unless trained to do it properly.

Talk with woman about

- Whether she is bleeding
 - Encourage CST (if due) even if she has her period
 - If bleeding irregular ([p301](#)) or symptoms of infection — important to take CST now to help make early diagnosis
 - If bleeding abnormal ([p301](#)) — request HPV + LBC co-test
- What is involved in speculum examination
 - Be specific. Show equipment, use pictures to explain procedure
 - Ask ATSIHP to help and translate, if appropriate
- Whether she would like someone with her (chaperone), even if practitioner female. Record whether chaperone present or declined
- May be some vaginal spotting or light bleeding after procedure
- Procedure shouldn't be painful but may be uncomfortable, she can stop procedure at any time

What you need

- Speculum — small, medium, large bivalve (duckbill) speculums to choose from. Warm if needed. Make sure it works properly
- Water-based lubricant
- Gloves
- Examination light
- Tool for taking CST sample — broom, plastic spatula or brush
- Liquid based cytology vial
- Swabs for collecting STI test samples

What you do

- Ask woman to empty bladder
 - If appropriate, collect sample for urine pregnancy test, STI screen

- Woman lies on her back, knees bent, feet together
- Position light at end or side of bed, directed at genitals
- Put on gloves
- Ask woman to let her knees fall apart and try to relax her thighs and perineum
- Look at vulva, perineum and anal area for warts, sores, discharge, unusual skin conditions

If painful unhealed sores around vaginal opening that could be genital herpes ([p257](#)) — **do not** continue with examination.



7.6

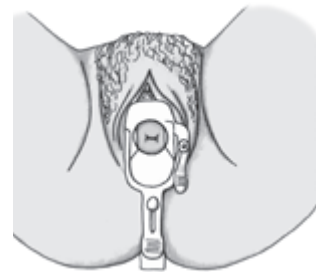
- Start with medium speculum
 - If woman very small, young or post-menopausal — consider starting with small speculum
 - If overweight or obese — may need larger speculum
- Lubricate tip of speculum with warm tap water or small amount of water-based lubricant
- Hold speculum in your right hand with handle down and blades closed
- Gently separate labia with left hand — F 7.6
- Encourage woman to relax (breathe out) while you put speculum in gently and slowly, with downward pressure along back wall of vagina. Be careful to avoid pinching — F 7.7
- When speculum fully in vagina, press lever to gently open blades about 2cm — F 7.8
- Find cervix, lock speculum — F 7.9. When using metal speculum **do not** over-tighten screw
- If you can't find cervix —
 - Close blades, remove speculum half way, angle it more to middle than to back. May need to change angle a couple of times to find cervix. Be gentle
 - Remove speculum ([p274](#)). Change woman's position to tilt pelvis more, try small firm pillow or rolled up towel under bottom
 - Try using larger/longer speculum or inserting speculum upside down
 - If vaginal walls lax — slide condom over speculum and cut end off. Condom may hold walls back and let you see cervix
 - Do gentle digital vaginal exam to locate cervix. Gives you better idea of how to find cervix with speculum



7.7



7.8



7.9



- If you still can't see cervix — ask woman to lie on left side with knees bent, insert speculum from back. Good for larger women
- If you still can't find cervix — **do not** keep trying, this may cause distress. **Talk with more experienced practitioner or doctor**
- When speculum in place
 - Try to keep 1 hand on speculum all the time to stop it slipping out before you have finished
 - Look at cervix. Take note of
 - Polyps, warts, ulcers, abnormal appearance
 - Discharge — colour, amount
 - Inflammation of cervix (cervicitis) — cervix bleeds easily when touched with cotton wool swab
 - Ectropion. Normal finding — red velvety area on outside of cervix extending into canal, sharp edge
 - Take CST sample ([p275](#)), STI swabs (*below*) as needed
- **Removing speculum**
 - Hold both parts of the handle together to keep blades apart, undo speculum screw, pull blades off cervix
 - Make sure blades are well clear of cervix before letting speculum close
 - Gently remove speculum, looking at vaginal walls for discharge, redness, warts, ulcers
- Do bimanual examination if needed and you are skilled ([p278](#))
- 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 and tighten
 - If muscles seem weak or slack — teach Pelvic floor exercises ([p283](#))

Collecting samples

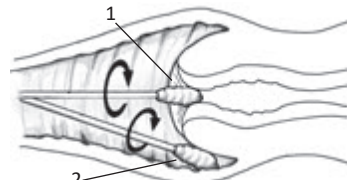
Swabs for STI tests

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

- Using *Aptima*/dry swab
 - Collect sample from just inside cervical canal — F 7.10 position 1
 - *THEN* use same swab to collect sample from high (deep) in vagina (in posterior fornix below cervix) — F 7.10 position 2
 - If using *Aptima* swab — take care not to touch swab below groove



7.10

- Remove lid from tube, put swab in tube — F 7.11
- Break off handle at groove — F 7.12, leaving swab in tube
- If using plain dry swab — put back into transport tube
- Repeat procedure with amies transport medium swab
 - Put swab into amies transport medium container
- Make sure swab containers correctly labelled, closed tightly
- Store and transport at room temperature (*CPM p368*)



7.11



7.12

Request

- *Aptima*/dry swab — ‘HVS/ECS – gonorrhoea, chlamydia, trichomonas NAAT’
- Amies transport medium swab — ‘HVS/ECS – MC&S and gonorrhoea culture’

Cervical Screening Test (CST)

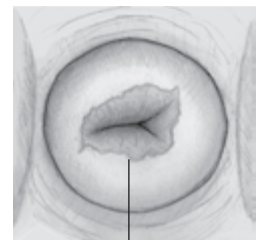
Screening test for HPV infection and cervical changes that may lead to cervical cancer.

Best time to take CST

- Best taken between periods, and when no significant cervical infection
- Bleeding **not** a reason to delay doing CST
- For older women vaginal dryness can make taking CST uncomfortable and more difficult
 - Give local oestrogen preparation for 2 weeks before CST. 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 CST best collected at or after 6 weeks. Can be done earlier if needed

Attention

- Need to sample cells from cervical transformation zone (TZ) — where red ‘internal’ (endocervical) cells change to paler ‘external’ (ectocervical) cells — F 7.13
- TZ may be
 - 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

7.13



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 for CST
 - Plastic spatula (**do not** use wooden spatula)
 - Endocervical brush (eg *Cytobrush*). **Do not** use in pregnancy

What you do

- Have all equipment ready and label vial before starting

Cervical sample must include material from TZ. Collect cells from both inner area (endocervix) and outer area (ectocervix) of cervix.

- If pregnant —
 - **Do not** use endocervical brush. Use broom or plastic spatula
 - **AND** any concerns about doing CST (eg history of miscarriage) — **medical consult**
- **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)
- **Cervix sampler 'broom'** — F 7.14
 - Put long central bristles just inside cervical opening so shorter bristles rest on outer cervix — F 7.15
 - Rotate through 360° 5–6 times in same direction
 - Shorter bristles should cross TZ. If they don't
 - 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** — F 7.16
 - Rest spatula firmly on cervix with elongated end in cervical os
 - Rotate through 360° twice in same direction — F 7.17
 - Use endocervical brush as well to collect TZ and endocervix sample



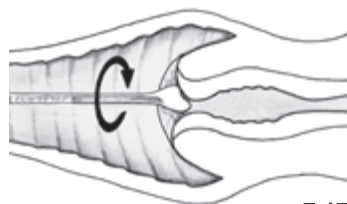
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7.15

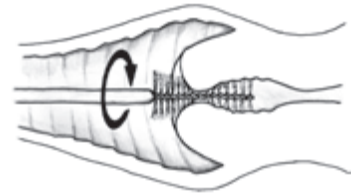


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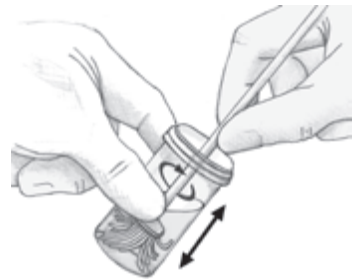
7.17

- **Endocervical brush** (eg *Cytobrush*) — F 7.18
 - Put endocervical brush gently into cervical opening for $\frac{2}{3}$ of length, with last 2 rows of bristles still seen — F 7.19
 - Do $\frac{1}{4}$ (90°) turn of brush — may cause a little bleeding



After taking sample for CST

- Before removing speculum, quickly transfer cervical sample from tool (broom, brush or spatula) to vial containing liquid based medium and follow manufacturer's instructions
- Agitate end of cervix sampler broom, endocervical brush or spatula in the liquid-based cytology solution — F 7.20
 - 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
- Give information on pathology form to help interpret CST — pregnant, last CST result if available, findings on examination, 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 CST
 - If woman has abnormal vaginal bleeding ([p301](#)) at time cervical sample collected — request HPV + LBC co-test
 - Include clinical indication for co-test
- Ask woman if she agrees to be on National Cancer Screening Register and clinic register
 - Explain purpose and encourage woman to be on the Register
 - If woman doesn't agree — write 'Not for Register' on pathology form
- Talk with woman about coming back for results, how long results will take
 - See *Managing results* ([p293](#))
 - **Medical consult** about any abnormal findings



Bimanual examination

Used to check for

- Inflammation and pain in pelvis (eg PID)
- Size, shape, position, tenderness of uterus and ovaries

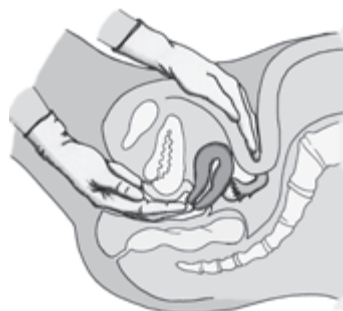
Do not

Do not do unless trained to do it properly

- **Do not** do on woman in early pregnancy to check for ectopic presentation — not helpful, could be harmful
- **Do not** do on woman who has never had sex
- **Do not** do if painful sores around opening of vagina ([p256](#))
- **Do not** do if speculum exam very painful

Do

- Woman lies on back with knees bent and dropped out
- Watch for signs of discomfort or tenderness throughout procedure
- Put on gloves, put lubricant on right index and middle fingers
- Gently separate labia with left hand. Put index and middle fingers of right hand into vagina. Push backward and slightly down toward rectum
- Put left hand flat on woman's lower abdomen below umbilicus — F 7.21
- Find cervix with right hand, it usually feels hard
 - Feel for masses or nodules
 - Move cervix gently from side to side. If movement causes pain ('cervical excitation') — suggests pelvic inflammation (eg PID [p260](#))
- Use firm but gentle pressure to push cervix up toward hand on abdomen. Should push top of uterus (fundus) up to left hand and allow examination
 - Size — normal uterus about 9cm long
 - Shape
 - Position
 - Tenderness
- Move hand on abdomen to one side. Move fingers in vagina to recess beside cervix (lateral fornix) on same side, press deeper and upward onto abdominal hand
 - Normal ovary may or may not be felt — check size, tenderness
 - Normal fallopian tube never felt
- Repeat on other side
- **Medical consult** about any abnormal findings, or if not sure what you felt



7.21

Pregnancy testing

- **Urine pregnancy 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** is used to check urine test, to work out how much pregnancy hormone (human chorionic gonadotropin [hCG]) present. hCG increases in early pregnancy
 - Negative result — not pregnant or not enough hCG to be detected at time of test
- **Pregnancy testing done**
 - When woman requests it
 - After delayed or missed period/s
 - Before starting new contraception, after late contraception — see *Quick Start method* (p340)
 - To exclude pregnancy in vaginal bleeding
 - To exclude ectopic pregnancy in woman with lower abdominal pain
 - Before giving certain medicines or immunisations
- Do test in private place — may not want anyone else to know result, or that she is having pregnancy test

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

Check

- Offer STI check — woman (p238), young person (p243)

Do

- For urine pregnancy test
 - Best specimen is first morning urine. If late in day — ask woman to bring in early morning specimen the next day
 - Ask woman for small urine sample
 - Use test as directed on packet
 - Check result carefully, tell woman 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, 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 unplanned — see *Unplanned pregnancy* (p314)

- If not experienced in providing pregnancy counselling — refer to doctor, social worker, Family Planning, local counselling service (eg at women's health service)

Negative pregnancy test

- If woman doesn't want to become pregnant — talk about contraception ([p335](#))
- If planning a pregnancy — see *Pre-pregnancy counselling* ([p84](#))
- If having problems getting pregnant — see *Infertility* ([p309](#))
- Tell woman to come back for repeat test in 2 weeks if not had a period

Female catheterisation

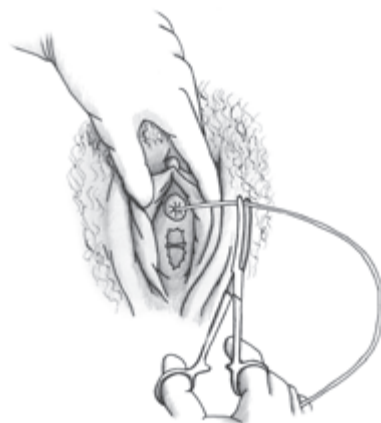
- Female practitioner should do this procedure, if possible
- Aseptic procedure
- Tell person that inserting catheter will cause discomfort
- Check for latex allergy

What you need

- PPE — mask, goggles, sterile and non-sterile gloves
- Blueys
- Sterile catheterisation or dressing pack
- Normal saline for cleaning
- Urinary catheter with balloon, or in/out catheter
 - Smaller the urethra, the smaller the catheter
 - 12G or 14G for adults, 6–12G for younger girls
- Clean dish to catch urine
- Sterile anaesthetic gel or water-based lubricant
- Sterile specimen jar, if needed
- Forceps (ones in dressing pack usually too small)
- If indwelling catheter — 10mL syringe filled with sterile water and catheter drainage bag

What you do

- Lie woman on bed, put blueys under bottom, keep upper body covered
- Put on gloves, mask, goggles
- Lay out dressing pack and prepare equipment
- Open catheter **outer packet**, drop catheter onto sterile area. **Do not** open inner plastic covering yet
- Ask woman to bend knees, feet together, let knees fall apart
- Put clean dish between her legs
- Remove gloves, wash hands, put on sterile gloves
- Hold labia apart with hand 1. With hand 2, clean genitals with cotton wool balls soaked in **normal saline**. Sweep down each side, repeat as needed using new cotton wool balls 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 — F 7.22



7.22

- Gently push catheter in until urine flows into collection dish
 - Push catheter in a further 2–4cm to make sure balloon is past urethra
- 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 (*CPM p393*), do U/A
- If catheter to stay in (indwelling) —
 - 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

Pelvic floor exercises

Pelvic floor muscles stretch from pubic bone in front to base of spine at back.

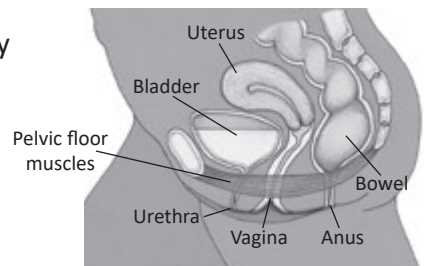
- Support pelvic organs — bladder, uterus, bowel
- Help control 3 openings in pelvic floor — urethra, vagina, anus

Strong pelvic floor muscles are important

- Pregnancy — firm pelvic floor supports pregnant uterus. Pelvic floor exercises help recovery after birth
- Urine control — pelvic floor muscles weaken after having babies, getting older. Can become incontinent ([p318](#)). 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 — strong pelvic floor can prevent problems
- Pelvic organ prolapse ([p320](#)) — 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



7.23

Do

• Talk with woman about

- Pelvic floor muscles — function and importance, need to exercise them
- Healthy lifestyle — healthy food, drinking enough water, physical activity (especially walking), healthy weight ([CPM p143](#))
- Stopping smoking ([CARPA STM p223](#)) — 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 — F 7.23
- Ask her to stop dribble of urine at end of urination, feel which muscles tighten. Once she knows correct muscles, tell her not to stop urine flow a lot, may interfere with normal bladder emptying
- Ask her to tighten ring of muscles around her anus as if she is trying to control wind, but not to tighten her buttocks, hips or thighs

- If clinician skilled, and woman consents — can help woman identify muscles during digital 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 digital vaginal exam — can check pelvic floor herself using her fingers. Talk about how to identify muscles
- **Teach woman to do pelvic floor muscle exercises**
 - Ask woman to
 - Tighten and draw in muscles around anus, vagina, urethra at same time. Woman should feel as though she is lifting them up inside her
 - Slow exercises — hold for 2 seconds (one-and-two), then relax. Increase each week by 1 second as able, up to 10 seconds. Start with 2 repetitions, slowly build up to 10. Usually takes up to 12 weeks to get to 10 x 10 second holds
 - 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 habits to help her 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 x 10 second holds
 - **Medical consult** if ongoing problems

Screening for breast cancer

- Recommendations for early detection of breast cancer include
 - Breast awareness — woman should be aware of how her breasts normally look and feel and any new or unusual changes
 - Screening mammogram of asymptomatic women in targeted age group
 - Breast exam by clinician (p270) for women over 50 years who have not had a mammogram in the last 2 years

Risk of breast cancer increases with age. Most common over 50 years. Finding early can mean cancer is small, more effectively treated, less likely to have spread.

BreastScreen Australia — joint Commonwealth, state/territory initiative that provides free screening service to targeted groups of women.

Screening mammograms

- If woman **asymptomatic** — screening mammogram. See Table 7.1
- If woman has symptoms — **medical consult** and diagnostic mammogram
 - See *Investigating breast problems* (p287)

Table 7.1: Comparison of screening and diagnostic mammograms (x-rays)

Screening mammogram	Diagnostic mammogram
• 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 — eligible for screening mammogram on request at BreastScreen services
 - Not enough evidence to support routine screening in these groups
- Women under 40 years — not eligible for screening mammograms through BreastScreen services
 - Dense breast tissue in younger women makes it hard to detect changes
- Women at high risk (eg strong family history of breast cancer or ovarian cancer) need to be screened more closely
 - **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 [FRA-BOC])

If woman notices new or unusual breast changes (*p287*) — must do breast exam even if having regular screening mammograms.

Do

- Encourage breast self-awareness
- *AND* if over 50 years and no mammogram in last 2 years — do breast exam (*p270*) as part of Adult Health Check (*CPM p123*) and encourage mammography screening
 - More than half of all breast cancer diagnosed after investigating breast change found by woman or her doctor
- Encourage women to come to clinic if they notice
 - Lump *OR* change in shape or size of breast
 - Change to nipple — discharge, crusting, ulcer, redness, inversion
 - Change in skin over breast — redness, dimpling
 - Unusual persistent pain
- Encourage routine mammogram screening

Talk with woman about screening for breast cancer

- Explain what mammogram is, why it is done, what it can show
 - Many women worried about compression and pain during procedure — reassure them that it is only momentary and mild for most women
- Free screening available through state/territory BreastScreen services
- No patient travel assistance to travel for screening mammogram
- 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 — 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, may have ultrasound or biopsy to make diagnosis
 - Patient 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 (*CPM p123*)
 - At women's meetings
 - Women's health educators can provide training and support
 - Use resources — posters, pamphlets, information sheets
- 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

Investigating breast problems

Breast problems must be carefully assessed to find cause.

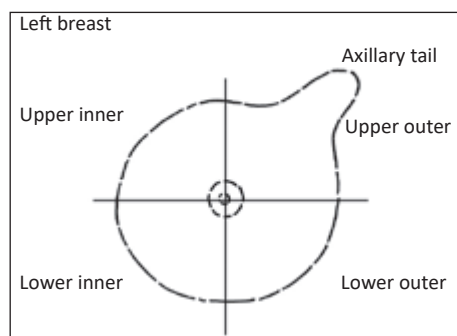
- National Breast Cancer Centre recommends ‘triple test’ approach
 - History and clinical examination
 - Imaging — breast ultrasound, mammogram ([p285](#))
 - Biopsy — tissue diagnosis
- Most women with breast problems don't have breast cancer
- Women of any age may present with breast problems
- Pregnancy and breastfeeding can cause lumps in breast

Ask

- About problem
 - Symptoms
 - Breast lump, pain
 - Nipple discharge, retraction
 - Change in size or shape of breast, skin over breast
 - When first noted
 - Constant or changing
 - Related to periods
- Medicines — especially contraceptive pills ([p349](#)), HRT ([p323](#))
- Periods
 - Menopause ([p321](#)). If postmenopausal — when periods stopped
- Pregnant
- Breastfeeding
- Previous breast problems and tests
 - Family history of breast cancer or other cancer (eg ovary, endometrial)
 - Smoking and alcohol intake
- Number of children, breastfeeding history

Check

- Do breast exam ([p270](#))
 - Ask woman to show you problem area/s. Always do full check yourself
- Check lump/s
 - Position
 - Size, shape
 - Consistency (hard or soft)
 - Mobility, whether joined to skin or muscle
 - Tenderness
- Record details on breast diagram — F 7.24



7.24

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 the 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 fine needle aspiration (FNA)
- **Priority** recall for **medical consult** after radiology appointment

Prevention and screening for cervical cancer

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 clear infection within 2 years

HPV immunisation

- Prevents infection with 4 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
- National HPV register reminds woman about second and third doses. Health services should also have recall system

HPV immunisation doesn't prevent all cervical cancers. Immunised women still need a regular cervical screening test every 5 years.

National Cervical Screening Program

The National Cervical Screening Program is planned to change in 2017

- *FROM* 2-yearly cervical cytology using Pap smears for women aged 18–69 years
- *TO* 5-yearly HPV testing for women aged 25–74 years

Guidelines for changing from the Pap smear to the HPV-based screening program are summarised in Table 7.2. They depend on woman's cervical screening history. Full details available in the [national guidelines](#).

Table 7.2: Changing from Pap smear to new Cervical Screening Program

Status in Pap smear screening program	Management in HPV based screening program
Normal Pap smear history	<ul style="list-style-type: none"> • CST at time scheduled under Pap screening program
Follow-up for pLSIL/LSIL cytology	<ul style="list-style-type: none"> • HPV test at time Pap smear scheduled <ul style="list-style-type: none"> ◦ If HPV (any type) detected — refer for colposcopy ◦ If HPV not detected — return to 5-yearly CST
Women already referred for colposcopy	<ul style="list-style-type: none"> • Continue colposcopy management according to new cervical screening program guidelines
Treatment for HSIL (CIN 2/3) AND undergoing or not yet started 'Test of Cure'	<ul style="list-style-type: none"> • Start or continue 'Test of Cure' according to new cervical screening program. 'Test of Cure' is <ul style="list-style-type: none"> ◦ HPV + LBC co-test 12 months after treatment ◦ <i>THEN</i> yearly until both tests negative 2 times in a row ◦ <i>THEN</i> return to 5-yearly CST • If either HPV or LBC abnormal at any time see <i>Women who have had treatment for HSIL (p296)</i>
Treatment for AIS (adenocarcinoma-in-situ) AND undergoing or not yet started surveillance	<ul style="list-style-type: none"> • Yearly HPV + LBC co-test indefinitely

Cervical Screening Test (CST)

CST replaces the Pap test. CST screens for HPV infection and cervical changes that may lead to cervical cancer. Diagnosis and early treatment can prevent cancer.

CST is a primary HPV test with reflex liquid based cytology (LBC) if needed. If HPV detected, the laboratory will automatically perform a 'reflex' LBC on the same cervical sample. Women do not need to provide a second sample for cytology test.

- 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
- For collecting sample see *Speculum examination and Cervical Screening Test* (p272)
- Under certain circumstances HPV testing on a low vaginal swab can be used as a cervical screening test. See *Self-collected sample for HPV test* (p264)

Who should have a CST

- All women who have ever been sexually active
 - Start at age 25 years
 - **Do not** start before 25 years unless woman had sexual activity when under 14 years and not vaccinated against HPV before start of sexual activity. Offer single CST between 20–24 years of age
 - Do every 5 years
 - When CST due — woman reminded by National Cancer Screening Register
- Older women
 - If CST negative — stop screening between age 70–74 years
 - If over 74 years — encourage CST if never had a screening test or do if woman asks for test
- Women who have had hysterectomy
 - Testing depends on type and reason for hysterectomy
 - See *Vaginal vault screening* (p297)
- Pregnant women can be safely screened
 - Do CST if due or overdue and woman likely to be difficult to follow-up postnatally. Best done before 24 weeks pregnant
 - Postnatal CST best collected at or after 6 weeks. Can do earlier if needed

HPV test on self-collected lower-vaginal swab (LVS)

- Offer to women aged 30–74 years who **decline a CST** and
 - Are unscreened
 - *OR* overdue for cervical screening by 2 years or more
- For collecting sample see *LVS for HPV test for cervical screening* (p264)
- If woman does self-collected sample for HPV test — recommend CST the next time she is due for screening

- **Limitations of self-collection method**

- Only tests for HPV infection — doesn't collect cervical cells for cytology
 - If HPV detected, woman needs speculum exam for collection of cervical sample for LBC
- Not cost-effective

Follow-up

- When results of screening available, talk with woman about follow-up if needed, remind her of date for next CST
 - 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
- **Medical consult** for all abnormal test results. May need
 - Additional tests at specified intervals
 - Colposcopy (*p300*) — checking cervix under magnification
 - Biopsy of suspicious areas

- Symptoms or signs of cervical cancer need investigation even if HPV + LBC co-test normal
 - Abnormal vaginal bleeding — between periods, after sex, after menopause
 - Abnormal cervical appearance

Managing recalls and reminders

- Timing of repeat CSTs important for screening, prevention and treatment of cervical changes
 - Routine interval between CST is 5 years
 - Need clinic-based local recall system (eg diary, card-based, computerised) to remind women when CST is due

National Cancer Screening Register

- Confidential national register of CST, cytology, cervix biopsy results and colposcopy data (appearance, diagnosis, treatment)
- Back-up for clinic recall system
 - Sends invitation to women when CST due
 - Sends reminder when woman overdue for test (eg CST, biopsy, colposcopy)
- Clinic or woman can ask National Cancer Screening Register for screening history to check if CST due
- Check if woman agrees to be on Register
 - Encourage woman to be on Register and explain why
 - If woman doesn't agree — write 'Not for Register' on pathology form
 - If woman agrees — results sent directly to register by laboratory



Table 7.3: Pathology tests — types and uses

Test requested	Specimen type	Laboratory performs	Used for
Screening tests			
Cervical Screening Test (CST)	Clinician-collected specimen in liquid medium	<ul style="list-style-type: none"> • HPV and reflex LBC <ul style="list-style-type: none"> ◦ Laboratory does LBC if HPV test positive 	<ul style="list-style-type: none"> • Routine cervical screening on clinician-collected sample • Repeat unsatisfactory CST (HPV test)
HPV test 'for cervical screening'	Self-collected LVS – in special circumstances	<ul style="list-style-type: none"> • HPV test only <ul style="list-style-type: none"> ◦ Cytology can't be done on this specimen 	<ul style="list-style-type: none"> • Routine cervical screening on self-collected sample • Repeat HPV test for cervical screening if initial LVS HPV test unsatisfactory
Follow-up tests			
HPV test	Clinician-collected specimen in liquid medium	<ul style="list-style-type: none"> • HPV and reflex LBC <ul style="list-style-type: none"> ◦ Laboratory does LBC if HPV test positive <p>(Follow-up after abnormality – uses same tests as CST)</p>	<ul style="list-style-type: none"> • Follow-up of women with HPV (not 16/18) detected • Women with HPV (any type) who had a colposcopy and need a follow-up test • When follow-up needed after total hysterectomy for benign disease
HPV + LBC co-test	Clinician-collected specimen in liquid medium	<ul style="list-style-type: none"> • HPV and LBC <ul style="list-style-type: none"> ◦ Laboratory does LBC irrespective of HPV result 	<ul style="list-style-type: none"> • Follow-up of women with a cervical abnormality <ul style="list-style-type: none"> ◦ 'Test of Cure' for HSIL ◦ Yearly ongoing for AIS • Women with abnormal vaginal bleeding
LBC test	Clinician-collected specimen in liquid medium	<ul style="list-style-type: none"> • LBC test only 	<ul style="list-style-type: none"> • Repeat unsatisfactory LBC test

Managing results

LBC report abbreviations are unchanged from the previous Pap smear test reports.

- Negative — normal
- Possible LSIL or LSIL — low-grade squamous intraepithelial lesion
- Possible HSIL or HSIL — high-grade squamous intraepithelial lesion
- Abnormal glandular cells
- Suggest invasive cancer

CST pathway — see Flowchart 7.1

- **HPV not detected** — CST in 5 years
- **HPV (16/18) detected** — refer directly for colposcopy
 - LBC result will be reported and available at time of colposcopy
 - Even if LBC negative or low grade (pLSIL/LSIL) — refer for colposcopy
 - If LBC unsatisfactory — specialist should repeat LBC at time of colposcopy
- **HPV (not 16/18) detected**
 - If LBC reports pHSIL/HSIL, glandular abnormality, invasive cancer — refer for colposcopy
 - If LBC unsatisfactory — take cervical sample for LBC in 6 weeks. **Do not** repeat HPV test
 - If LBC negative or pLSIL/LSIL — do HPV test in 12 months
 - If HPV test positive (any HPV type) — refer for colposcopy, regardless of LBC result
 - If HPV test negative — return to routine 5-yearly CST screening
- **Unsatisfactory HPV test** — repeat CST in 6–12 weeks
 - If reason for unsatisfactory sample identified (eg infection) — correct problem before re-testing

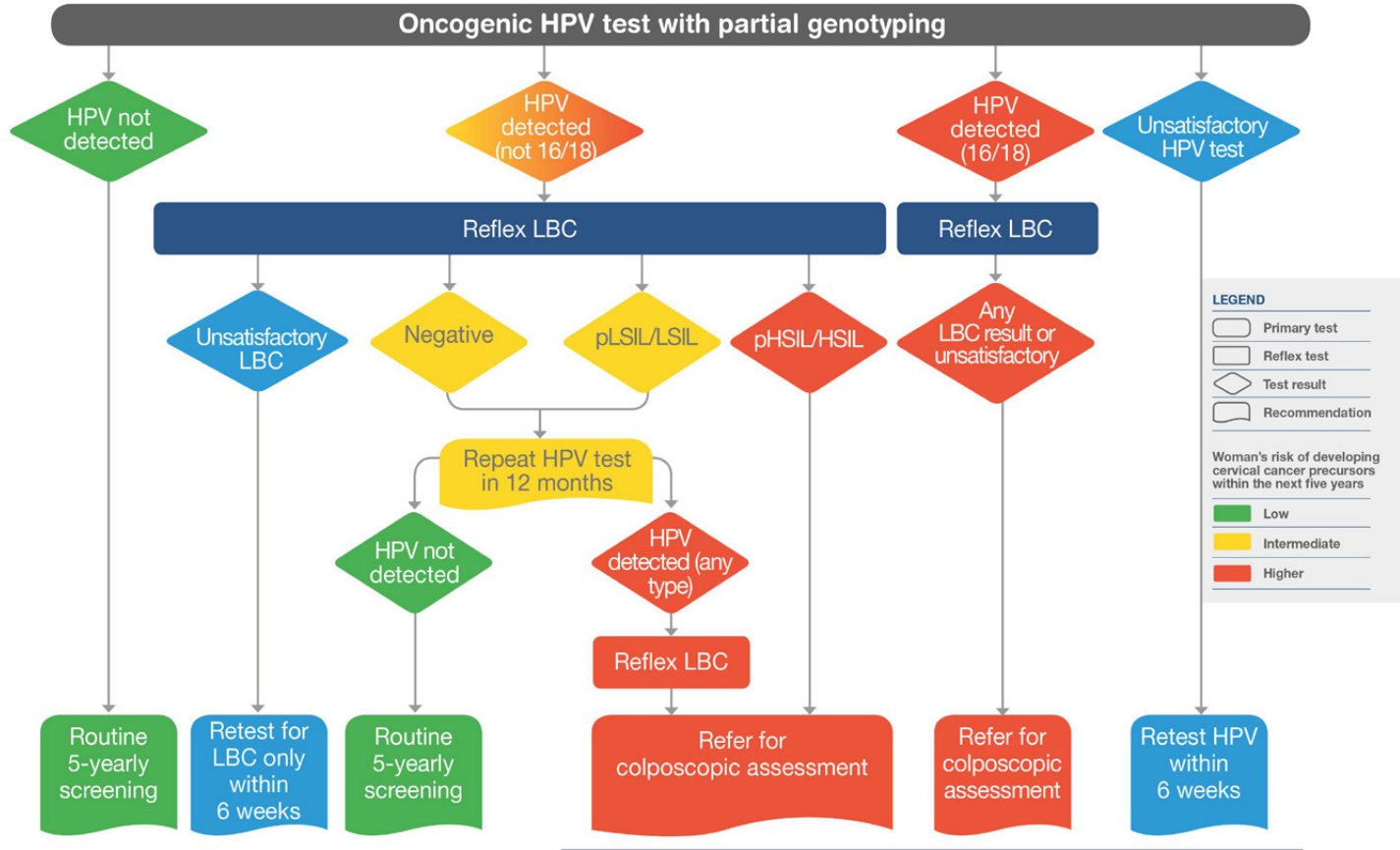
Self-collected LVS pathway — see Flowchart 7.2

HPV not detected — CST in 5 years. Clinician-collected sample advised

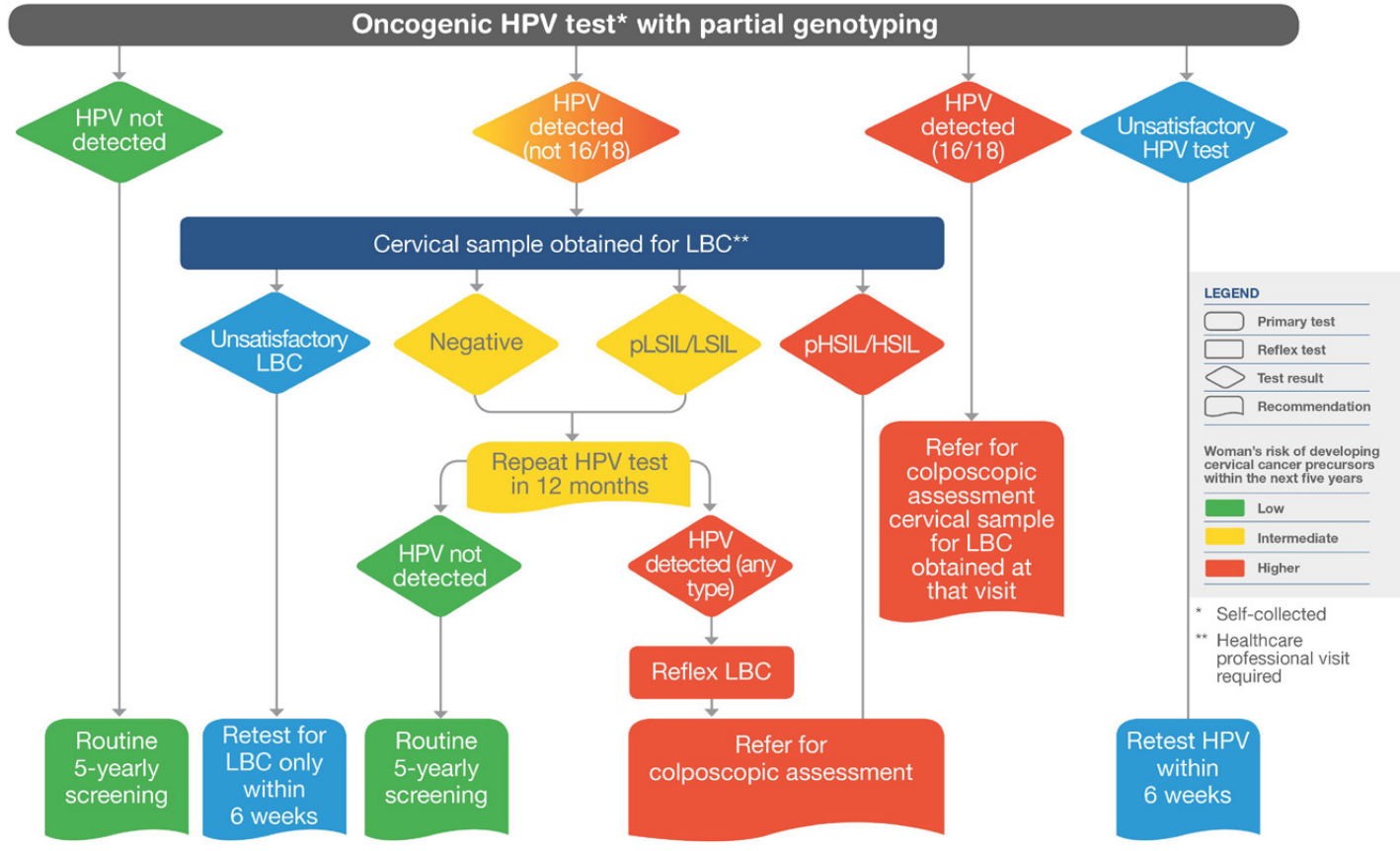
- **HPV (16/18) detected** — refer directly for colposcopy
 - Cervical sample for LBC collected by specialist at time of colposcopy
- **HPV (not 16/18) detected** — need clinician-collected cervical sample for LBC. Need for further follow-up depends on LBC result
 - If negative or pLSIL/LSIL — repeat HPV test in 12 months
 - Clinician-collected cervical sample for HPV test advised and preferred
 - Self-collected HPV test can be done but if abnormal will also need clinician-collected cervical sample
 - If LBC reports pHSIL, HSIL or glandular abnormality — refer for colposcopy



Flowchart 7.1: Cervical screening pathway for CST



Flowchart 7.2: Cervical screening pathway for self-collected LVS



Special considerations (Full details available in national guidelines)

In some groups of women, screening and follow-up of abnormalities may be complex, and should involve gynaecologist and relevant specialist.

- **Severely weakened immune system** (eg organ transplant, HIV)
 - Increased risk of cancer and high rates of recurrence, progression, persistence of abnormalities
 - Routine CST every 3 years
 - If CST result reports HPV detected (any type) — refer for colposcopy
 - LBC result will be available at time of colposcopy
- **Pregnant women**
 - Same screening guidelines as for non-pregnant women
 - Colposcopy can be performed safely during pregnancy
 - Definitive treatment for abnormal findings usually started after the birth
 - Treatment during pregnancy has increased risk of complications

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

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 Test (CST) every 5 years. At same risk of cervical cancer as women who haven't had a hysterectomy

Medical consult about any woman with total hysterectomy who presents with vaginal bleeding, abnormal vaginal discharge, vaginal pain.

Who should have vaginal vault screening

Check

- Previous cervical screening history
- Reason for hysterectomy
- Type of hysterectomy — total, subtotal
- Histopathology report for cervical pathology

Do

- See Flowchart 7.3 for some guidelines
 - First row — screening history
 - Second row — indication for hysterectomy
 - Third row — histology results from hysterectomy samples
 - Fourth row — 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 CST (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

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)

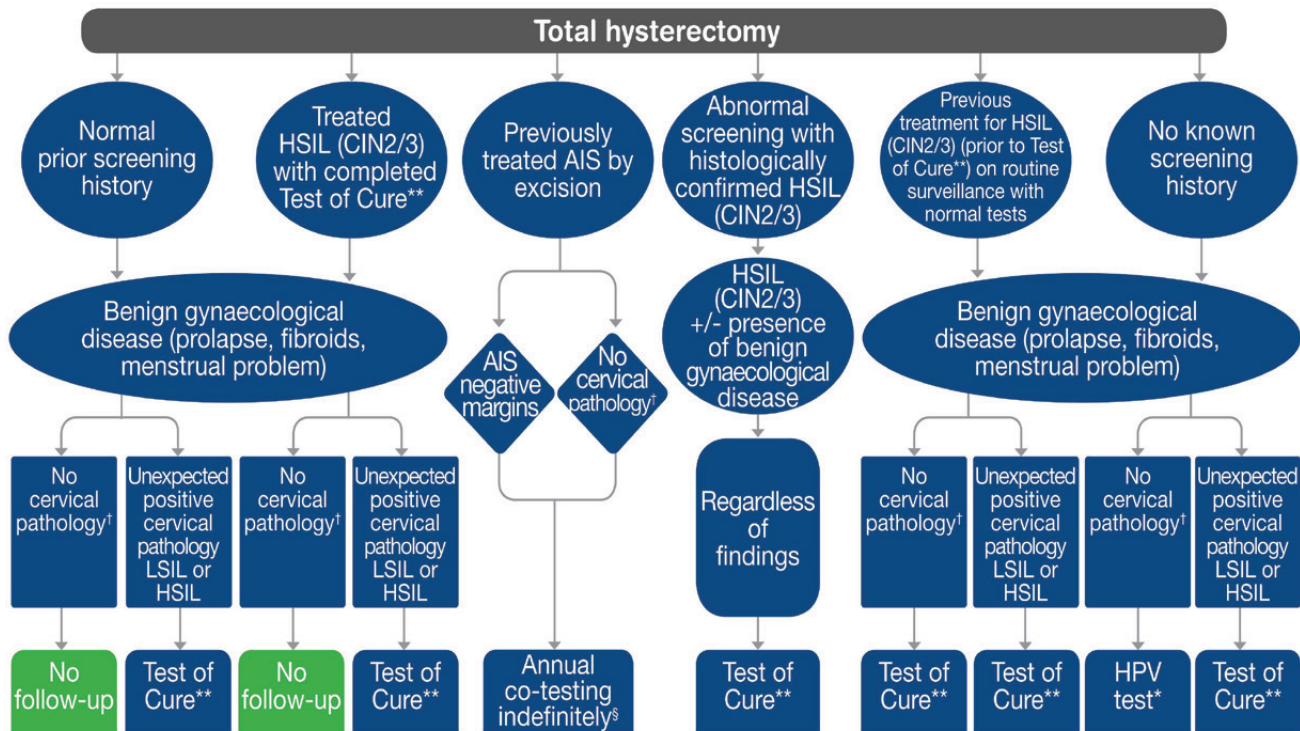
What you do

- Do speculum examination ([p272](#))
- 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 CST — see *A ter taking sample* ([p277](#))
- Take swabs for STI tests ([p274](#))
- Put sample in liquid vial (*ThinPrep* or *SurePath*) and follow manufacturer's/ laboratory instructions
- If vaginal discharge — see *Abnormal vaginal discharge* ([p253](#))
- 2 tests possible depending on recommended follow-up in Flowchart 7.3
 - Usually 'Test of Cure' — request 'HPV + LBC co-test'
 - Occasionally HPV test only — request 'HPV test'
 - See Table 7.3 ([p289](#)) 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

Flowchart 7.3: Vaginal screening after total hysterectomy



* HPV test to be taken from the vaginal vault 12 months after treatment & annually thereafter until the woman has tested negative on 2 consecutive occasions, after which she does not need further testing

§ Until sufficient data become 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

Colposcopy

Used to investigate abnormal CST or cervix with abnormal appearance.

- Colposcope — magnifying instrument for looking at cervix, vagina, vulva
- Done by gynaecologist at local clinic or in town
- Send women with limited physical mobility to town. Special colposcopy couch can help with positioning for procedure

Do

Explain colposcopy to woman

- Similar to having CST, takes 10–15 minutes
 - Speculum put into vagina so cervix can be clearly seen
 - Colposcope used to look very closely at cervix
 - Weak vinegar (acetic acid) and/or iodine solution put on cervix to help find abnormalities
 - If colposcope attached to camera — woman can watch procedure
- Cervical sample for CST or STI swabs may be taken at the same time, if needed
- If abnormality seen — may need biopsy. Small piece of tissue (about size of match head) removed for further examination
 - May be some mild discomfort (like a period cramp) during biopsy
 - Will be some vaginal spotting or light bleeding after biopsy
 - Advise no sex, don't use tampons for 3–4 days to let cervix heal

Explain follow-up after colposcopy

- Results not available for several weeks
- Assessment of cervical abnormality based on CST result, appearance at colposcopy, and results of biopsy if taken
- Management plan based on this assessment
 - Could include repeat CST, repeat colposcopy, surgery
- If management plan not clear — **medical consult**
- For special considerations (eg pregnancy) see section in *Prevention and screening for cervical cancer* ([p289](#))

Abnormal vaginal bleeding in non-pregnant women

- If bleeding very heavy (bright with large clots) *OR* signs of shock — see *Heavy vaginal bleeding (p12)* straight away
- If woman gave birth less than 6 weeks ago *OR* recent termination of pregnancy — see *Secondary postpartum haemorrhage (p212)*

Signs of shock

- Restless, confused, drowsy, unconscious
- Pale, cool, moist skin
- Fast breathing
- Pulse fast (more than 100 beats/min) or difficult to feel
- Low BP (systolic less than 100mmHg)
- Capillary refill longer than 2 seconds

Abnormal vaginal bleeding

- Bleeding from
 - Uterus (endometrium or uterine lining) that is **not** a normal period
 - Cervix (neck of uterus) 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

Bleeding between periods, after sex, or after menopause is always abnormal and **must** be investigated.

Causes of abnormal vaginal bleeding (non-pregnant)

- **Uterus**
 - Hormone problems causing irregular ovulation and irregular periods
 - Young women soon after starting periods (menarche)
 - Older women approaching menopause
 - Endocrine disorders (eg PCOS)
 - Medicines — HRT, hormonal contraception
 - Infections — STIs (*p245*), PID (*p260*), endometritis after childbirth, or surgery on uterus (eg termination of pregnancy, D&C)
 - Inflammation (eg foreign body, 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 are risk factors
- **Cervix** — inflammation, STI, polyps, cancer (may be any type of abnormal bleeding)
- **Vagina** — inflammation, tumours, trauma
- Genital tract injury

Assessing abnormal bleeding

Check first

If life-threatening bleeding — **urgent medical consult**, see *Heavy vaginal bleeding* straight away ([p12](#)).

- Do urine pregnancy test ([p279](#)) if
 - Woman of childbearing age
 - Any doubt that older woman is postmenopausal
- If test positive — see *Bleeding in pregnancy* ([p14](#))

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 ([p349](#)), Depo ([p347](#)), ENG-implant ([p343](#)), IUD ([p344](#))
 - Previous contraceptive use — could ENG-implant or IUD have been left in
 - Other medicines — especially blood thinners (eg aspirin), HRT ([p323](#))
- Age periods started (menarche)
- 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

- Temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#))
- POC test for Hb
- U/A, send urine for MC&S
- Check for ENG-implant in arm
- Abdomen — feel for tenderness, rebound, guarding
- Look for bleeding site. Carefully check perineum, vagina, cervix
- If woman has ever had sex — do speculum examination ([p272](#))
 - Do CST if due, even if bleeding
 - If bleeding after sex, in-between normal periods or woman postmenopausal — collect cervical sample for HBV + LBC co-test
 - Swabs for STI check – woman ([p238](#)), young person ([p243](#))
 - Check for IUD strings ([p344](#))
- If speculum examination not appropriate — collect low vaginal swabs for STI check ([p264](#))
- Bimanual examination ([p278](#)), if skilled
- If heavy bleeding and history of bleeding problems — take blood for FBC, LFT, TFT, clotting studies (INR/APTT)
- If irregular periods — take blood for PCOS ([p307](#))
- If not sure woman postmenopausal — take blood for FSH/LH, oestradiol

Do

- **Medical consult straight away if**
 - Shock or torrential bleeding
 - Heavy bleeding lasting 7 days or more
 - Hb less than 10g/L
 - Fever or abdominal tenderness/rebound
 - Pain not controlled with paracetamol
 - Genital tract injury
- **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 review** 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 12 months of no periods [amenorrhoea] 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)
 - Operation to look inside uterus (hysteroscopy) and scrape inside wall of uterus (D&C) *OR* endometrial biopsy — small piece of tissue from inside uterus taken to check for cancer

Vulval problems

- Vulval problems include itch, pain, bleeding, ulcers, lumps, change in skin colour or texture (eg skin cracking)
- Some women have no symptoms and abnormal appearance is found when woman is examined for another reason (eg cervical screening)

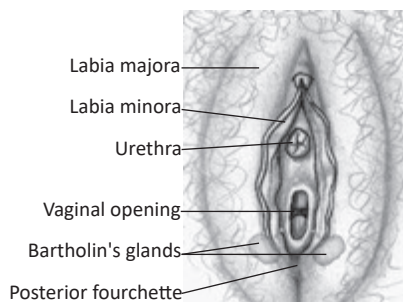
Refer any woman with persistent lump, ulcer, vulval skin colour change to gynaecologist to exclude vulval cancer.

Vulval itch

- Can be caused by many conditions
 - Candida
 - Tinea cruris (jock itch)
 - Dermatitis, psoriasis
 - Lichen planus, lichen sclerosis — 3–5% risk of progressing to cancer
 - VIN, vulval cancer

Vulval lumps

- Bartholin's cyst, Bartholin's abscess
- Boil or carbuncle (less common)
- Sebaceous cyst
- Collection of blood (haematoma)
- Varicose veins
- Vulval cancer (rare)



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Vulval pain

- STI related ulcers or lumps ([p256](#))
- Chronic thrush (candidiasis) or dermatitis with skin cracking
- Can occur without visible lesion (vulvodynia)

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

- Temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#))
- Vulva and perianal area — look for changes as above
- Low vaginal swab — NAAT for chlamydia and gonorrhoea

Do

- If persistent itch, pain, or skin changes — **medical consult**
 - Most women need gynaecology review, may need biopsy to make diagnosis
- If vulval biopsy — woman needs gynaecology review to follow up results
- If lichen sclerosis, VIN or vulval cancer — woman needs regular gynaecology reviews
- If topical corticosteroid prescribed for dermatitis or lichen sclerosis — check woman is using

Follow-up

- If persistent skin colour change, lump, or ulcer — refer to gynaecologist
 - Woman will need biopsy for diagnosis of important conditions, and to exclude cancer

Bartholin's cyst or abscess

- Bartholin's cyst — lump or swelling either side of vagina — F 7.26
- Bartholin's abscess — infected cyst. Infection can be due to STI or many other organisms. Can be very painful

Check

- If abscess — swab discharge. Request MC&S and NAAT for chlamydia and gonorrhoea

Do — if painful cyst

- If no infection — medical review, 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 — bed rest, regular **pain relief** (*CARPA STM p377*). May need opioids
- If advised by doctor —
 - Give **ceftriaxone** IM single dose – adult 500mg mixed with 2mL **lidocaine (lignocaine) 1%**
 - **AND azithromycin** oral single dose – adult 1g
 - **THEN amoxicillin-clavulanic acid** oral twice a day (bd) for 5 days – adult 875+125mg
 - If allergic to penicillin or vomits after taking medicine — **medical consult** about different antibiotic



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Follow-up

- If abscess discharges — complete antibiotics
- If recurrent abscesses — refer to gynaecologist. May need operation

Polycystic ovary syndrome

Complex condition affecting reproductive and metabolic health. May be present in up to 20% of Aboriginal women. Main underlying problems are increased androgens (eg testosterone) and insulin resistance. Other features include excess hair growth (usually on face and chest), irregular periods, infertility, obesity, abnormal lipids, increased cardiovascular risk, Type 2 diabetes.

- PCOS diagnosed if at least 2 of these present *AND* other causes excluded (eg thyroid abnormality, hyperprolactinaemia)
 - Periods more than 35 days apart (oligomenorrhoea), or no periods (amenorrhoea), or no ovulation documented despite normal periods
 - Raised free androgen index or free testosterone on blood test and/or on clinical signs (eg abnormal hair on face or chest)
 - Polycystic ovaries present on ultrasound
- Can be difficult to diagnose in women under 20 years or within 2 years of periods starting (menarche)
 - 80% of women under 20 years have polycystic appearing ovaries so ultrasound not reliable
 - Cycles are often irregular in first 2 years after periods start

Check

- Adult Health Check (*CPM p123*)
- If not known to have diabetes — 75g OGTT or HbA1c
- Take 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 TSH and prolactin to exclude other problems
- Look for acne, abnormal body hair
 - Ask if facial or chest hair has been removed (eg by shaving, waxing)

Do

- If woman has PCOS
 - Cardiovascular risk assessment (*CARPA STM p230*), manage accordingly
 - Mental health screen — higher risk of depression, anxiety
 - **Medical consult** — doctor will advise if need for
 - Blood tests to exclude other causes (eg 17-hydroxyprogesterone, FSH, DHEAS)
 - Ultrasound
 - Medical review — doctor will organise endocrinologist or gynaecologist review, depending on main clinical problem

Management

PCOS management has many parts. **Chronic disease management plan** needed (eg General Practitioner Management Plan, yearly Adult Health Check)

- Pregnancy can still be possible. If not wanted — organise contraception

- **To regulate periods**
 - If overweight — weight loss and exercise
 - Many women resume regular periods with 5% weight loss
 - Medicine, if directed by doctor, may include
 - Metformin — helps 70% of women resume regular periods
 - If not trying to become pregnant — hormonal contraception
- **To protect against endometrial (uterine) cancer** (if less than 4 periods a year)
 - Oral contraceptive pill
 - *OR* cyclical progesterone (eg medroxyprogesterone)
 - *OR* long acting progesterone rod (eg ENG-implant)
 - *OR* hormone releasing IUD (eg levonorgestrel)
- **Infertility** (*p309*)
 - If overweight — weight loss and exercise
 - Many women resume regular periods and ovulation with 5% weight loss
 - Refer to specialist for further investigations. May suggest clomiphene citrate or letrozole
 - If irregular periods — metformin can be started straight away
 - Other options — surgery, assisted reproductive technology
- **For 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

Note: 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)
- **To prevent diabetes and cardiovascular disease**
 - Healthy diet and exercise (*CPM p143*) key to maintaining good cardiovascular health
 - Consider metformin
 - Maintain healthy weight (*CPM p145*) — BMI 20–25
 - Quit or reduce smoking (*CARPA STM p223*)

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, relating to the Land, Aboriginal cultural stories, and the Law. 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 her partner to a male health staff member. Important to talk about how pregnancy happens (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 (eg PCOS [p307](#)), not ovulating regularly
 - Damaged or blocked fallopian tubes (eg due to PID, endometriosis)
 - Medical problems — diabetes, thyroid disease, kidney disease, overweight, underweight, smoking, older age
- Man
 - Not enough healthy sperm
 - Blocked tubes
 - Hormonal problem

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 ([CPM p123](#))
 - If checks normal — give reassurance, education about getting pregnant
 - Talk about healthy lifestyle ([CPM p143](#)), losing weight if needed, avoiding smoking ([p111](#)) and alcohol ([p112](#)), taking supplements ([p110](#))
 - 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 woman and check file notes for

- 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 come (ejaculate), pain with sex, lubricants used, any problems
- Gynaecological history — abnormal cervical screening tests, infections (eg STI, PID, endometritis)
- Contraception — all methods ever used, 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 — especially 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

- BP, BMI, waist circumference
- Urine — collect mid-stream urine
 - U/A
 - Urine pregnancy test ([p279](#))
- Test/s for diabetes ([CARPA STM p234](#))

- Signs of PCOS ([p307](#))
 - 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 for ENG-implant
- Thyroid — any enlargement or nodules
- Chest and heart sounds — any murmurs
- Signs of high prolactin — milk discharge from breasts (galactorrhoea)
- Abdomen ([CARPA STM p18](#)) — scars, tenderness, masses
- Genital exam, speculum exam if skilled ([p272](#)). Swabs for STIs, cervical screening if due, check for IUD strings
- Bimanual exam if skilled ([p278](#)) — signs of PID ([p260](#)), masses

Do

Talk with woman about

- Managing any immediate problems
- Healthy lifestyle ([CPM p143](#)) including weight loss if needed, reducing alcohol ([p112](#)), stopping smoking and other drugs ([p111](#)), taking pregnancy supplements ([p110](#))
- 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
- If infertility confirmed — more tests needed to find cause

Initial pathology tests

Take blood, urine and swabs needed for

- Adult Health Check ([CPM p123](#)) including full STI check ([p238](#))
- First antenatal visit ([p86](#))

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 ([p307](#))
- If diagnosis uncertain — some blood tests may need to be repeated on day 2–3 of woman's 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 — see F 7.27
 - 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

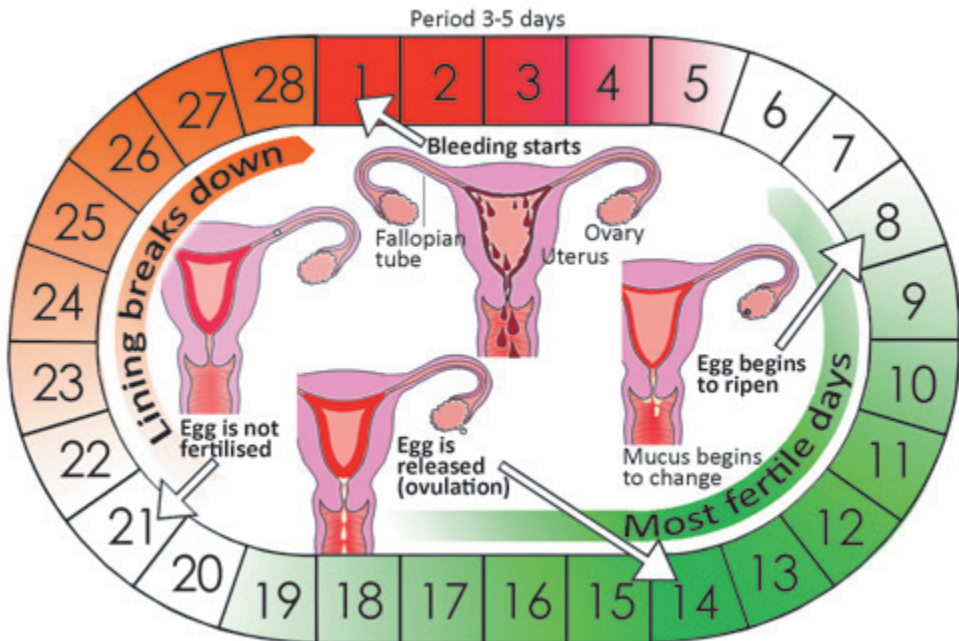
Further management

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 patient travel, and whether dependent on primary or secondary infertility

Partner

- May want to see male clinician
- Needs thorough history and examination including Adult Health Check (*CPM p123*), STI check (*CARPA STM p272*), immunisations



7.27

- 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. See *Collecting semen (CPM p400)*

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
 - Need referral from doctor
- Check cost of treatment with service. May be lower if both have Health Care card, but still high. All costs paid in advance before any Medicare refund

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.

- If woman is legally able to give consent — decision is hers alone
 - She can tell you who else should know (eg family, partner, health carer)
 - She can't be forced (coerced) to make a particular decision
- Don't judge the woman. Be private, confidential, objective and supportive
 - Aim is to help woman make a decision on how to proceed
- 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 (TOP) vary among women. Respect these beliefs
- Refer to someone suitable in your clinic/team or to appropriate service if
 - You don't have enough knowledge
 - You have strong beliefs that are different to the woman's, you can't be objective
 - Woman doesn't want to be assessed in her community
- **Refer immediately** to appropriate agency and check individual protocols if
 - Woman would not have been able to consent to sex
 - Woman a survivor of domestic/family violence or sexual assault
 - Mandatory reporting requirements

Resources to help patients, families, health practitioners make decisions —

- Family Planning organisation
- www.childrenbychoice.org.au
- www.pregnancybirthbaby.org.au

Talking about pregnancy choices

- Talk about main options
 - Continuing pregnancy and becoming a parent ([p315](#))
 - Termination of pregnancy (TOP, abortion) ([p315](#))
 - Adoption or fostering ([p317](#))
- **Actively** work with woman to help her make the best decision — this process can involve listening, talking, sharing information, 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 visit pathology tests ([p86](#))

- Don't always need to work out pregnancy dates before talking about choices
- Aim for referral within 1 week of making a decision — regardless of choice or pregnancy dates

Continuing pregnancy

Woman has decided to continue pregnancy and be a parent.

- Follow usual clinical systems. See *Antenatal care* (p88)

Termination of pregnancy (TOP)

In Australia, women have the right to choose to end a pregnancy.

- 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, local legislation
- **All** women wanting TOP need **urgent medical consult**
 - If doctor has conscientious objection to TOP — must refer to another doctor who doesn't object
- Once woman has decided to have TOP
 - Contact service provider **straight away** — there are legal time frames for when a TOP can be done. These can vary by state/territory
 - Ask them what is needed for referral (p316), travel, TOP preparation — differs between providers and states/territories

- Talk with woman about decision to have TOP — and give information about
 - TOP procedure
 - Referral
 - Follow-up

TOP procedure

- TOP done surgically (operation with anaesthetic) or medically (tablets)
 - Method depends on local services, TOP providers, weeks pregnant
 - Medical TOP can be done up to 9 weeks pregnant
 - Surgical TOP best done before 12 weeks pregnant
- Give patient information on procedure from local provider or use www.childrenbychoice.org.au
- Usually need to travel to regional or major centre
 - Help woman organise accommodation and childcare if needed
 - Some GPs are licensed to prescribe medical TOP. May reduce travel and costs
- Check if woman
 - Wants someone for support — in consult, for travel, after procedure
 - Needs guardian for consent



Referral

- TOP provider usually needs referral to include
 - Reason TOP recommended (choice, health including social and emotional)
 - Health summary, medicines, Medicare number
 - STI check (self-collected vaginal swabs or urine) ([p238](#))
 - Blood group and antibody screen
 - Pregnancy dates (*below*)
 - Contraception plan (*below*)
- 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* ([p279](#))
- Use pregnancy wheel to work out pregnancy dates from last normal period
 - OR count days since last normal period and divide by 7 (= weeks)
- Single blood test for hCG level is not reliable for pregnancy dating
- Palpable uterus **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**

Contraception plan

- Discuss contraception options ([p335](#))
 - LARC is best
 - Check what local provider offers — may insert ENG-implant or IUD

Follow-up

- TOP provider should give woman information on what to expect after TOP
 - Nausea usually settles in days
 - Breast tenderness may last for weeks
 - Normal period expected after 4 weeks — if not using hormonal contraception
 - Woman can be fertile 2 weeks after TOP — contraception plan important ([p335](#))
- 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* ([p212](#))
 - If fever, discharge, abdominal pain — see *Uterus infection* ([p215](#))

- Ask how she is feeling. Women may feel sad after TOP or miscarriage, but normal to have a range of emotions
- Ask about current contraception. If nothing — discuss options ([p335](#))
- Check that any positive pathology has been followed up

Adoption

Adoption is a legal process and varies between state/territories.

- Counselling begins well before delivery
- Get support from relevant adoption services or departments — see
 - www.ag.gov.au/FamiliesAndMarriage/IntercountryAdoption/Pages/Australianstateandterritorycentralauthorities.aspx
- **Medical consult**

Fostering

Fostering can be 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

Urinary incontinence

Woman sometimes 'wets herself', because she can't control when she passes urine. Often ashamed, doesn't ask for help. More common in women who have had children. Often gets worse as woman gets older, if overweight, has urinary tract infection. Many causes, some serious.

Ask

- When did problem start
- When does urine come out
 - All the time (dribbling)
 - Before she can get to toilet (can the woman hold on/urgency)
 - When she 'strains' (coughs, sneezes, lifts, laughs)
 - Wets the bed
- Does she know it is coming out
- How many times does she 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, does she dribble afterwards
- Does she 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* (p320)
- How much fluid does she drink — ask about alcohol, coffee, tea, soft drink
- Is she pregnant
- Is she postmenopausal (stopped having periods)
- Change in bowel habit (eg constipation, leakage)

Check file notes for risk factors

- Obstetric and gynaecological history — fibroid uterus, prolapse, menopause
- Medical history — diabetes, kidney disease, COPD, medicines

Check

- If skilled —
 - Check for big bladder, pelvic masses, fistula, prolapse (p320)
 - Check pelvic floor muscles (p283)
 - Does urine leak during check, when woman coughs or bears down
- If not skilled but have concerns — **medical consult**
- U/A. Send urine for MC&S, even if U/A normal
- Screen for diabetes if not done in last 12 months (*CARPA STM p234*)

Do

- Medical review for further assessment. May suggest
 - Renal tract ultrasound to check for incomplete emptying of bladder (urinary residual volume)

- Assessment of bladder and urethra (urodynamic studies)
- Gynaecologist review — may recommend
 - Topical hormone (oestrogen) therapy
 - Medicine to reduce urinary urgency
 - Surgery to stop leakage
- If UTI — treat
 - Do follow-up MC&S to check infection has cleared
- 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 nutritionist for dietary advice
- Teach pelvic floor exercises ([p284](#)), or refer to women's health nurse, physio
 - If no improvement after 10 x 10 second holds for 3 months — **medical consult**
- Absorbent pads/continence aids are not treatments. Can help with symptoms, but underlying cause needs to be addressed

Talk with woman about

- Possible causes. Reassure her incontinence is reasonably common, treatment is available
- Reducing pressure on weak pelvic floor ([p283](#))
 - Stopping smoking ([CARPA STM p223](#)) — avoid chronic cough
 - Weight loss if overweight
- Drinking at least 2L of water a day
- 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 around bladder wall, cervix and uterus, and/or bowel are weak. Pelvic organ (bladder, uterus or bowel) protrudes into or out of vagina — F 7.28.

Ask

- Lump in vagina
- Pulling/dragging feeling in vagina
- Leaking urine, difficulty passing urine
- Constipation
- Painful sexual intercourse

Check

- U/A. Send urine for MC&S, even if U/A normal
- 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



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Do

- Refer all women with any symptoms of pelvic organ prolapse to gynaecologist for full assessment and discussion of treatment options
 - Treatment can include pelvic floor exercises ([p284](#)), supportive pessary ring, surgery
- If UTI — treat ([CARPA STM p411](#))
 - Do follow-up MC&S to check infection has cleared

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 of transition from start of irregular cycles with/out change in menstrual flow pattern, until 12 months after last period
- Postmenopause — no periods for at least 12 months
- Surgical menopause — when both ovaries have been removed
- Premature ovarian insufficiency — when menopause occurs under 40 years

Any bleeding in older women after more than 12 months without periods is **abnormal** and must be investigated to exclude cancer — **medical consult**.

- Serious health problems in postmenopausal women include
 - Cardiovascular disease (*CARPA STM p250*)
 - Diabetes (*CARPA STM p254*)
 - Cancer — breast (*p285*), endometrial (uterine), cervical (*p289*)
 - Osteoporosis (*CPM p126*) — bones become thinner, more likely to break

Symptoms of menopause

- Some women have no symptoms except their periods stop, most have mild symptoms, small number have troubling symptoms and may seek help
- Symptoms may differ in different stages, last a short time or for years
- Symptoms of menopause include
 - Hot flushes, night sweats — sudden hot feeling, may get sweaty
 - Go away quickly, may be worse and wake her up at night
 - May happen many times during the day, every day, may last for years
 - Dry vagina, pain with sex. Often gets worse as woman gets older
 - Sleep disturbance, in addition to effect of hot flushes
- Other symptoms — may be due to medical problem, normal ageing, lifestyle, social situation and not directly due to menopause
 - Urine problems — frequency, urgency, leaking, infections
 - Joint and muscle aches and pains, headaches, migraines
 - Mood changes, irritability, depression, anxiety, low desire for sex (libido)
 - Dry skin, with crawling feeling or itching
 - Tiredness, forgetfulness, difficulty concentrating
 - Weight gain

Check

- Do Adult Health Check (*CPM p123*)
- Mammogram if due (*p285*), or if starting HRT (*p323*)
- Cervical screening if due (*p289*)
- If not sure it is menopause (eg women has had a hysterectomy) — serum FSH test may help decision. No role for routine hormone tests at menopause



- If fracture and/or risk factors for osteoporosis (*CPM p126*) — medical review to assess need for bone densitometry (special bone x-ray to look at bone strength)

Do

- Explain normal life changes to older women, why they may get symptoms, what can be done to manage them
- Explain importance of regular Adult Health Check (*CPM p123*)
- Talk about pelvic floor exercises (*p283*) — 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, loneliness
- If under 40 years with premature menopause — **medical consult** for assessment and management

Treatment of specific menopause problems

- **Hot flushes**
 - Lifestyle measures — keep body cool, avoid hot drinks and foods, use relaxation techniques, stop smoking, normalise weight (10% or 10kg weight loss can improve symptoms), limit alcohol intake
 - Hormones — patch (transdermal) or oral oestrogen, with progesterone if uterus intact
 - If hormones contraindicated (eg breast cancer, active liver disease, stroke) — consider non-hormonal medicines (eg SSRIs, SNRIs, gabapentin/pregabalin)
 - Natural therapies and treatments
 - Plants, herbs, traditional methods used by grandmothers or ngangkari (traditional healers)
 - Acupuncture, manipulative therapy, breathing exercises
- **Vaginal dryness, pain with sex**
 - Adequate arousal, use water-based lubricants
 - Topical vaginal oestrogen or systemic hormones
- **Mood changes**
 - Counselling, lifestyle changes, cognitive behavioural therapy
 - If major depression — consider giving SSRIs
- **Low libido**
 - Often needs a lot of counselling and education
 - Consider referral to appropriate services. May need HRT
- **Irregular or heavy periods**
 - See *Abnormal vaginal bleeding in non-pregnant women (p301)*
 - Any bleeding more than 12 months after menopause — **medical consult**

Hormone replacement therapy (HRT)

- HRT is not a contraceptive
- HRT is best management for hot flushes, night sweats, troubling symptoms
- Small increased risk of breast cancer or VTE — patch (transdermal) safer than oral if VTE risk
- If under 60 years or less than 10 years since menopause — quality of life benefits generally outweigh risks
- Types of HRT include
 - Oestrogen
 - Progesterone
 - Selective oestrogen receptor modulators
- Minor side effects include
 - Sore breasts, vaginal bleeding, fluid retention
 - Nausea, headache, mood changes

Prescribing HRT

- 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 starting menopause
- Use with care if significant risk factors for CVD, diabetes, smoker
 - If increased risk of CVD — patch better than oral HRT
- If perimenopausal — best period control by using cyclical HRT regimen, oral contraceptive pill, or oestrogen patch plus LNG-IUD
- If postmenopausal — aim for no periods. Use continuous hormones
- If women has uterus — endometrial protection with progestogen is essential
- If women has had hysterectomy — prescribe oestrogen alone
- If premature ovarian insufficiency — give HRT at least until usual age of menopause
- **Do not use HRT 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 leg clots (deep vein thrombosis) or strokes

Domestic and family violence

Domestic/family violence is a crime. Children who witness violence can suffer long-term effects — consider counselling, support.

You **must know** your responsibilities under laws in your state/territory that relate to violence against adults and children, and to mandatory reporting.

- Usually directed at **intimate partner** — spouse, girlfriend, ex-partner, child. Often by a man against a woman, but consider violence in **all** relationships
- Can involve sexual, physical, emotional, or economic violence, threats of violence, behaviour that causes fear — see *Sexual assault in adults (p327)*, *Child neglect, abuse, sexual abuse (CARPA STM p143)*
 - 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 — Indigenous women and children, disabled people, refugees or new arrivals, the elderly
- You **must report** any violence against children, including emotional harm — mandatory reporting (*CARPA STM p143*)

Consider domestic/family violence when

- Injury doesn't match story of how it happened
- Injuries covered by clothing — breasts, abdomen, chest, unusual or hidden places on body
- Injuries to abdomen or private parts (genitals), injuries when pregnant
- Treating women with gynaecological or anxiety problems
- Person repeatedly comes to clinic with injuries or vague symptoms
- Delay in seeking medical attention, doesn't want to talk about what happened
- If concerned about a child — see *Child neglect, abuse, sexual abuse (CARPA STM p143)*

Person may

- Appear nervous or ashamed
- Describe person who did it as bully or getting angry easily
- Seem uncomfortable or anxious when partner present
- Be accompanied by partner who won't let them speak or hangs too close
- Have symptoms of chronic stress, anxiety (*CARPA STM p196*), depression (*CARPA STM p201*)

Remember: Safety is first priority for person and practitioner.

Do

- Thorough physical assessment
 - **Always** ask about strangulation (*p331*), especially in intimate relationship assaults

- **Treat person's injuries**

- Check if person has social, emotional or health concerns
 - Self-harm, thoughts of self-harm, partner threatening self-harm
 - Drug and/or alcohol (grog) misuse
 - Sleeping or eating problems
 - Loneliness or isolation from family and friends
 - Sexual problems or STIs

A – Ask them who it is/isn't OK to talk to before involving family or other support people, arrange appropriate interpreter if needed.

- **Do not** confront or accuse likely offender. Avoid doing anything that might make them angry or violent with you, other staff, or person you are helping
- Make sure you talk to person where they feel safe, alone if they want. May mean seeing person again later
- Ask direct **non-blaming** questions that won't cause shame or guilt
 - **Can you tell me what happened?** Has your partner ever hit you? Has anyone at home threatened to hurt you or your children? Are you ever afraid for yourself or the children? **Have you got somewhere safe to stay?**

B – Believe what they tell you — listen to their story, be supportive and responsive, don't judge them or lay blame.

C – Call in supports — women's shelter, police, specialist support services. They can give person the right legal advice.

- Ask person if you can refer them to local or regional services — domestic/family violence support service, women's shelter, emergency accommodation, emergency travel support
- Ask if they want to report what happened to police, offer private telephone. If they are reluctant, ask if you can ring for them
- **If you suspect child abuse** — you **must report** to child protection service (*CARPA STM p143*), mandatory reporting
- In some states/territories you must report suspected domestic/family violence

D – Document history, injuries, management plan.

- Record in detail what person says happened, how they presented — but remember it is not your job to investigate complaint
- Measure and describe injuries, use drawings. May be needed in court
- Management plan — if person stays in community
 - Check they have a safe place to stay
 - Record support people
 - Make sure they know who to contact, how to get help quickly
 - Review person again within 24 hours and regularly until crisis has passed
 - Offer referrals for counselling and support



E – Ensure (make sure of) ongoing safety.

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 without criticising them or partner.

Sometimes victim may not feel able to leave their violent home. Accept their choice.

- Talk about a **safety plan** to avoid possible violence, including
 - Warning signs 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 the children
 - Talking with relative who can discourage attacker from violence
 - Getting restraining order or Apprehended Violence Order (AVO). Contact local police for more information
- If you have serious concerns about safety of person who is refusing help —
 - Talk about situation with your manager
 - Report situation to police

F – Follow-up.

- Follow-up injuries. Use this time, when not in crisis, to talk
- Check their safety plan each time they come to clinic — people move around, key supports can leave community. Should have important documents together in safe place — may need them in a hurry
- Talk to person about cycle of violence — violence followed by making up, then good times, then build up and violence again
- Work with local domestic/family violence support service on ongoing safety of person

Domestic/family violence impacts on long-term physical and emotional health. Make sure victims are offered routine health checks — Adult Health Check ([CPM p123](#)), mental health assessment ([CPM p112](#)), school-aged health check ([CPM p121](#)), child health check ([CPM p118](#)).

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

Sexual assault in adults

Sexual assault is any sexual act without consent. Legal definitions vary in different states/territories.

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 sexual abuse (CARPA STM p146)*
- You must know what is required under your state/territory legislation, including mandatory reporting requirements

Do first

- **Contact doctor or sexual assault service for advice**

Remember — *Assessing trauma — primary and secondary survey (CPM p35).*

- 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

Talk with person about assault

- Believe person, take allegation seriously, 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
 - **Remember:** Offenders can give reasonable explanations and may be leaders or trusted people in community
- Help person be in control of how much they have to talk
 - Only ask for details that will guide initial examination and clinical care
 - Let them know they don't need to tell you all 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
- Not your job to get 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
 - *Examples:* “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 collection of evidence (forensic exam) must be done as soon as possible and **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 NT)
 - If no mandatory report needed — person decides whether or not to report to police
- Give clear, accurate information, including written information, about options for legal, medical, counselling support
- Assess safety — may be safety from alleged assailant or from self. Work with person to develop safety plan if appropriate ([p326](#))
- 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

- Was strangulation involved ([p331](#)), especially if intimate relationship assault
- Do they want to report assault to police
 - Can change their mind any time during clinical care
 - Contact sexual assault service if
 - Agree to have police involved
 - Undecided about involving police but agree to forensic exam
 - If person sure they don't want legal action — forensic exam not needed. Strongly encourage medical check ([p329](#))

If person thinks they may take legal action, are seriously injured, or safety not assured — strongly encourage and help them to contact police as soon as possible after injuries treated.

Do

Arrange forensic examination if needed

- 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**

- Determine where examination will take place and who will do it
 - If going to hospital — forensic exam, 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

- 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
- Wear gloves during any medical examinations and change frequently to prevent DNA contamination
- If wounds need treatment straight away — only clean areas needed for safe medical management. **Sexual assault service consult**
- Advise 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)
- 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 delay in transfer
- 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
- Obtain consent before collecting any specimens

Serious injuries

- Give urgent clinical care
 - Only clean wound areas as needed for urgent treatment (eg wound edges before suturing)
 - If need to do vaginal or rectal exam before forensic exam — look carefully and document any external genitoanal 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 in with person for comparison
- Give **pain relief** as needed ([CARPA STM p377](#))
- **Medical consult**, send to hospital

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



- For social or emotional reasons, may be better for person to be referred to service outside home community
- Check temp, pulse, RR, BP, O₂ sats — work out REWS (p8)
- Examine whole body carefully. Document injuries
- Treat remaining injuries. Give **pain relief** if needed (*CARPA STM p377*)
 - If painful or bleeding genital or rectal injuries — **medical consult**
- Do full STI check – man (*CARPA STM p272*), woman (p238), young person (p243)
 - Offer presumptive treatment for possible STIs. If you don't know protocol for your community — check with sexual health unit
 - If risk of HIV exposure — talk with sexual health unit urgently. Need to start preventive treatment as soon as possible, within 72 hours of assault
 - Consider and manage risk of hepatitis (*CARPA STM p363*)
- If vaginal rape and woman of childbearing age not using contraception — do urine pregnancy test (p279), offer emergency contraceptive pill (p353)
 - Best in first 24 hours but can give up to 5 days after
- Give information about available counselling services, offer to call phone counsellor to talk with person now
- Assess risk of self-harm/suicide (*CARPA STM p207*)
- Try to make sure person has safe place to stay — with relatives in same or another community, women's shelter — see *Domestic and family violence* (p324)
- Ask to come back in 2–3 days for review, or sooner if upset or worried
- Remind them that legal action is still possible, but more difficult, in the future

Follow-up

- See again in a few days, or as soon as person wants
- Be gentle but thorough. Ask about and check
 - Physical complaints and symptoms
 - Injuries — oral, pelvic, genital, urinary, anorectal
 - Contraception, pregnancy
 - STIs. If positive test/s — see *STI management for women* (p245). If symptoms — see relevant protocol
 - Coping responses — counselling, medicines, alcohol or drug use, cigarette use (more/less)
 - Mood, emotional wellbeing. If anxious, depressed, not coping — see *Mental health assessment* (CPM p112), offer referral to mental health service
 - Current and relevant past medical, surgical, psychiatric history
 - Social — relationships, housing, police investigation
- 2–3 weeks after assault
 - Consider repeat STI check – man (*CARPA STM p272*), woman (p238), young person (p243)

- Offer urine pregnancy test ([p279](#))
 - If pregnancy test positive — talk with woman about options, including termination of pregnancy ([p315](#))
 - 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 common — can affect relationships, families, communities
- Promote concept of recovery, plan together how this will happen
 - Consider referral to counselling, 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 a risk factor for later homicide.

Ask

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

Check

- Temp, pulse, RR, BP, O₂ sats — work out REWS ([p8](#))
- Coma scale score ([CARPA STM p74](#))
- Shortness of breath, noisy breathing (stridor), hoarse voice
- Tender laryngeal/cricopharyngeal cartilage
- Crackles under skin (subcutaneous emphysema)
- Loss of laryngeal crepitus (clicking sensation when laryngeal cartilage moved to side). Loss can mean swelling between laryngeal cartilage and vocal cords
- Small red/purple spots (petechial bruising) on face, eye, roof of mouth (palate)
- Irritable, restless

Do

- **Send to hospital urgently if**
 - Difficulty swallowing or breathing (dyspnoea)
 - Loud high pitched sound when breathing in (stridor)
 - Crackles under skin (subcutaneous emphysema)
 - Irritable and you suspect hypoxic brain injury
 - Any voice change or loss of consciousness
 - Lot of external swelling, bruising and/or tenderness
 - Loss of laryngeal crepitus
 - Also intoxicated
- Even if asymptomatic, delayed swelling (late onset oedema) can cause breathing obstruction up to 36 hours after strangulation. If person not going to hospital — review regularly, 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

8 Contraception

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Naming contraceptives

Table 8.1: Contraceptive names and abbreviations

Abbreviation	Full name	Common name
COC	Combined oral contraceptive pill	Pill
Copper IUD	Copper intrauterine device (eg <i>TT 380A</i> , <i>Multiload 375</i>)	Coil
Depo	Depot medroxyprogesterone acetate	Depo, needle
ECP	Emergency contraceptive pill	Morning-after pill
ENG	Etonogestrel — type of progestogen	
ENG-implant	Etonogestrel implant (eg <i>Implanon-NXT</i>)	Rod, bar, stick
FABM	Fertility awareness based methods	Natural methods, rhythm method
IUD	Intrauterine device	Coil
LARC	Long-acting reversible contraception	
LNG	Levonorgestrel — type of progestogen	
LNG-IUD	Levonorgestrel (hormonal) intrauterine device (eg <i>Mirena</i>)	Coil
NE	Norethisterone — type of progestogen	
POP	Progesterone-only pill	Breastfeeding pill, mini pill
UPA	Ulipristal acetate	ECP, morning-after pill

Contraception — general principles

- Women value their fertility
- Modern contraceptives help women prevent, plan and space pregnancies
- Some contraceptives help reduce period pain and bleeding problems
- Modern contraceptives are generally safer than being pregnant
- Clinics and communities should promote effective contraception for all women
 - At routine check ups and consultations
 - Especially if being pregnant is risky for woman
- Women want an **effective** contraceptive that
 - Reliably prevents pregnancy
 - Allows rapid return to fertility when stopped
 - Is easy to use
 - Has few problems (side effects)
- Contraception is reversible. Sterilisation is permanent

Emergency contraceptive pill (ECP)

- Remember to use ECP ([p353](#)) if woman
 - Had unprotected sex in the last 5 days (120 hours)
 - *AND* has no contraception
 - *OR* her contraception is late or overdue

Always offer ECP straight away, it is very safe.

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)
- Depo contraceptive injection (Depo)

Effectiveness of contraceptive types — see Table 8.2

If 100 women use this method for 1 year — % = how many **don't** get pregnant.

- Using ENG-implant, only 1 out of 1000 women become pregnant each year
- Using contraceptive pills, 8 out of 100 women become pregnant each year

Be really safe — 'double-up'

- **Double-up** = contraceptive + condoms
- Using condoms properly can prevent STIs



Table 8.2: Contraceptive effectiveness

% who don't get pregnant	Contraceptive method
99+%	ENG-implant, IUDs (LARC)
94%	Depo (LARC)
92%	Contraceptive pills
82%	Condoms
78%	Withdrawal, 'pulling out'
76%	Fertility awareness-based methods (FABM – eg 'rhythm method')
15%	No contraception

Choosing a contraceptive method

Choosing the best contraceptive method may take time. Explain you may need to ask a lot of questions.

Step 1 — talk about effectiveness

Use Table 8.3: Comparing contraceptives

Step 2 — talk with woman about what method is practical for her

- Has she used contraception before, was the method OK
- LARC (p343) are very convenient. Only need to visit clinic
 - Every 3 months (12–14 weeks) for Depo
 - 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








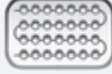



Step 3 — talk with woman about her bleeding patterns

- 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 (p238), young person (p243)
 - 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
- See *Abnormal vaginal bleeding in non-pregnant women* (p301)

Table 8.3: Comparing contraceptives

Effectiveness	Contraceptive type and features	
99+%	<p>ENG-implant (p343) (eg <i>Implanon NXT</i>)</p> <ul style="list-style-type: none"> • 99.95%, • Lasts 3 years • Highly reversible 	<p>LNG-IUD (p344) (eg <i>Mirena</i>)</p> <ul style="list-style-type: none"> • 99.8% • Lasts 5 years • Highly reversible • Reduces bleeding 
	<p>Depo contraceptive injection (p347)</p> <ul style="list-style-type: none"> • 94% • Repeat every 12–14 weeks • Usually stops periods • Average 6 months to restart ovulating 	<p>Copper IUD (p345)</p> <ul style="list-style-type: none"> • 99.2% • Lasts 5–10 years • Highly reversible • No hormones • Usual periods 
	<p>Permanent sterilisation (p358)</p> <ul style="list-style-type: none"> • More than 99.8% • Vasectomy (p359) • Tubal ligation (p358) • Tubal occlusion (p358) 	
90%	<p>COC (p349)</p> <ul style="list-style-type: none"> • 92% • 1 pill once a day • Regulates periods 	<p>Vaginal ring (p351) (eg <i>NuvaRing</i>)</p> <ul style="list-style-type: none"> • 92% • Change every 4 weeks • Works the same way and has same issues as COC 
	<p>POP (p351)</p> <ul style="list-style-type: none"> • 92% • Need to use at same time each day (within 3 hours) 	
80%	<p>Male condom (p356)</p> <ul style="list-style-type: none"> • 82% • Put on before sex every time • STI protection 	<p>Female condom (p355)</p> <ul style="list-style-type: none"> • 79% • Put in before sex every time • STI protection 
	<p>Diaphragm (p357)</p> <ul style="list-style-type: none"> • 88% • Put in before sex, leave in for 6 hours after • Works better in older women • No hormones 	



Step 4 — exclude pregnancy

- Do urine pregnancy test (p279)
- If test negative and unprotected sex in last 5 days (120 hrs) —
 - Offer ECP (p353)
 - See Quick Start (p340)
- If pregnant — see *Unplanned pregnancy* (p314) or *Antenatal care* (p88)

Step 5 — check woman's risk

Assessing contraceptive risk is complex. Always get help with working out and talking about risk, if needed.

- Assessment includes
 - 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
 - Risk to woman from contraceptive method
- Medical risks from contraception may not be most important issue for woman
- Medical risks from contraception divided into
 - Risk from hormones
 - Absolute (contraindications) (p339)
 - High (blood clots) (p340)
 - Risks with individual methods

Table 8.4: Best contraception choices for common clinical indications

Condition	Best choices	Comments	Avoid
Psychosocial issues			
Very young — under 14 years	First choice ENG-implant (p343) Second choice Depo (p347)	If they have a guardian — contact Office of Public Guardian	COC POP
<ul style="list-style-type: none"> • Domestic/family violence • Volatile substance use, alcohol misuse • Not a good pill-taker 	LARC (p343)		COC POP
Depression	ENG-implant (p343) IUD (p344)	Depo (p347) is long lasting and can't be undone if adverse reaction	Depo

Condition	Best choices	Comments	Avoid
Common medical conditions			
Diabetes	ENG-implant (p343) IUD (p344)		COC
High BP	ENG-implant (p343) IUD (p344)		COC
Heart disease (AF, heart attack, stroke)	ENG-implant (p343) IUD (p344)		COC Depo
Artificial heart valve	ENG-implant (p343) IUD (p344)		COC
Chronic kidney disease	ENG-implant (p343) IUD (p344)		COC, if Stage 2 or worse
Postnatal			
• Breastfeeding — child less than 6 weeks	First choice LARC (p343) Second choice POP (p351)	Need to take POP at same time every day (within 3 hours)	COC
• Breastfeeding — child 6 weeks or over • Not breastfeeding	LARC (p343)	Can start COC at 6 or more weeks postnatal	
Common medicines			
Reduce effectiveness of hormonal contraception			
Enzyme-inducing antiepileptics	IUD (p344) Depo (p347)		COC POP ENG-implant
Rifampicin	IUD (p344) Depo (p347)		COC POP ENG-implant
Antiretrovirals		Specialist advice	
Increased blood clot risk			
Anticoagulants	LARC (p343)		COC
Note: Common antibiotics, antiparasitics, antifungals don't affect LARC or contraceptive pills.			

Risks with contraception

Hormonal contraception

Absolute risks (contraindications)

- Abnormal vaginal bleeding
- Breast or liver cancer, or had treatment for these in the last 5 years
- Severe liver disease

Women with absolute risks can't use hormonal contraception — need non-hormonal method. **Medical consult.**

High risk — blood clots

- Blood clots are uncommon, but can cause severe problems
- Oestrogen part of COC increases risk of clots, compared to other methods
- 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 COC if

- Moderate or high cardiovascular risk (*CARPA STM p230*)
- Previous stroke, heart attack, angina, AF
- Mechanical heart valve
- Anticoagulant use
- Diabetes and any of — poor control (HbA1c more than 84mmol/mol [9.8%]), nerve pain (neuropathy), eye damage, kidney disease
- Chronic kidney disease, Stage 2 or worse
- High BP
- Abnormal blood fats
- Obesity — BMI more than 35
- Localised (focal) migraine with aura
- Smoker over 35 years
- Previous VTE or family history of VTE — first degree relative under 45 years
- Prior thrombogenic mutation (eg Factor V Leiden)
- SLE (antiphospholipid positive)

Risks with individual methods

- LARC (*p343*)
- COC (*p349*)
- ECP (*p353*)
- Barrier contraception (*p355*)
- Permanent sterilisation (*p358*)

Starting contraception

Quick Start — a convenient, safe way

We used to wait until a period before starting contraception (day 1–5) — but some women got pregnant while waiting for their contraception.

- **Quick Start** supports starting a 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
 - But no known problems for fetus or pregnancy from LARC ([p343](#)), COC ([p349](#)), POP ([p351](#))
 - **Must** do repeat urine pregnancy test in 4 weeks — **high priority recall**

Quick Start — only 3 steps

Step 1 — exclude pregnancy

- Can be confident of no 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 tests — negative urine pregnancy test **only** excludes pregnancy if more than 21 days since last unprotected sex.

Step 2 — start contraceptive method

- If unsure about pregnancy, but want to offer contraception today — explain
 - No known adverse outcomes on fetus or pregnancy from LARC or Pills
 - LARC and Pills take 7 days to work, so no sex or use condoms for first week after starting
 - If first choice method not available on the day — consider other effective contraceptive methods for short-term cover. See Table 8.3
- Always check BP, BMI when starting contraception

Step 3 — follow-up

- **Must** do repeat urine pregnancy test in 4 weeks — **high priority recall**
- If woman pregnant at follow-up —
 - Stop contraception, **medical consult**
 - See *Unplanned pregnancy* ([p314](#))
 - Always check BP, BMI

Routine contraception check is simple, be opportunistic.

- Include in STI checks – woman ([p238](#)) young person ([p243](#)), cervical screening ([p289](#)), combined checks for chronic diseases (*CARPA STM* [p239](#)), Adult Health Check (*CPM* [p123](#))
 - Always do BP, BMI
 - Re-check contraception risk ([p339](#))
 - Is their contraception appropriate, consider LARC
 - Ask about worries, including period problems
 - Check dates of contraceptive — when is it next due



Stopping contraception

Ask why they stopped or want to stop.

- If woman wants another type of contraception — see Table 8.3
- 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
 - Offer pre-pregnancy counselling ([p84](#))
 - Advise woman to consider continuing contraception until after pre-pregnancy counselling is complete

Long-acting reversible contraception (LARC)

Etonogestrel (ENG) implant (eg *Implanon NXT*)

99.95% effective

What — small flexible, plastic rod (40 x 2mm)

Type — hormone. Implant slowly releases ENG (progestogen)

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, within 24 hours of removal

Placement

- Inserted by eligible practitioner — with local anaesthetic in upper, non-dominant arm
- If arm unsuitable — can use upper thigh or lower abdomen
 - **Medical consult**

Quick Start ([p340](#)) — yes

Who benefits — most women including

- Immediately postnatal or breastfeeding
- Young
- Women with raised cardiovascular risk ([CARPA STM p230](#))

Special issues

Bleeding

- Will change period cycle and bleeding
 - Most women have lighter, irregular bleeding
 - 20% have no periods
 - 10% have troublesome spotting or bleeding
- If annoying bleeding for more than 6 weeks — **medical consult**, see [Managing troublesome bleeding on LARC \(p348\)](#)

Fertility return

- **Always** prepare woman for rapid pregnancy risk after removal

Side effects

- Uncommon — mood change, appetite, acne, headache
- Rare — implant shifts

Young girls

- Good choice for young girls as doesn't affect fertility
- If girl hasn't started her periods — **medical consult** about using

Follow-up

- Set recall for change/removal
- Offer regular Adult Health Check ([CPM p123](#)), STI check – woman ([p238](#)), young person ([p243](#))

Do not use ENG-implant if

- Absolute risks (contraindications) (p339)
- Using medicines reducing effectiveness (p335)

Levonorgestrel intrauterine device (LNG-IUD) (eg *Mirena*)

99.8% effective

What — T-shaped stem, wrapped with small plastic sleeve containing hormone

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 mucus, thin endometrium, prevent implantation, alter egg and sperm transport

Timing — 5 years contraception, for woman over 45 years lasts to menopause. 7 years bleeding control. **Do not** use LNG-IUD as emergency contraceptive

Fertility return — very quick, within 24 hours of removal

Placement — requires insertion (p346) into uterus by eligible practitioner

Quick Start (p340) — no

- Must make sure woman is not pregnant. See *Pregnancy testing* (p279)
- Schedule for insertion at appropriate time
- Consider other effective contraceptive methods for short-term cover (p336)

Who benefits

- Any woman needing effective, long-lasting contraception
- Women with heavy or painful periods
- Women with high cardiovascular risk (*CARPA STM p230*) or other risk factors (p339)

Special issues

See *IUD insertion* (p346), *IUD removal* (p347), *IUD complications* (p347).

Bleeding

- Can have frequent bleeding or spotting in first 3 months, then usually (65%) becomes lighter, shorter or absent
- If annoying bleeding for more than 6 weeks — **medical consult**, see *Managing troublesome bleeding on LARC* (p343)

Fertility return

- **Always** prepare woman for rapid pregnancy risk after removal

Side effects

- Uncommon — headache, breast tenderness, acne

Follow-up

- Set recall for change/removal
- Offer regular Adult Health Check (*CPM p123*), STI check – woman (*p238*), young person (*p243*)

Do not use LNG-IUD if

- Absolute risks (contraindications) (*p339*)
- Current active uterine or pelvic infection (eg chlamydia, gonorrhoea, PID, septic abortion)
- 48 hours to 4 weeks after birth of baby (postpartum)
- Gestational trophoblastic disease
- Endometrial and ovarian cancer, waiting for treatment
- Severe uterine distortion

Copper intrauterine device (eg *TT 380A*, *Multiload 375*)**99.2% 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 kill sperm (spermicidal) or reduce sperm's ability to move (motility)
- Affects transport and implantation of egg

Timing

- *Multiload 375* and *TT380A short* effective for 5 years
- *TT 380A standard* effective for 10 years
- Can be used as emergency contraception up to 5 days (120 hours) after unprotected sex
 - 99% effective
 - Insertion as emergency contraception may not be practical

Fertility return — very quick, within 24 hours of removal

Placement — needs insertion (*p346*) into uterus by eligible practitioner

Quick Start (*p340*) — no

- Must ensure not pregnant. See *Pregnancy testing* (*p279*)
- Schedule for insertion at appropriate time
- Consider other effective contraceptive methods (*p336*) for short-term cover

Who benefits — any woman needing effective, long-lasting contraception without hormones. Especially useful if hormone-related risks

Special issues

See *IUD insertion* (p346), *IUD removal* (p347), *IUD complications* (p347).

Bleeding

- Can spot or bleed heavier/longer in first 6 months. Generally settles

Fertility return

- **Always** prepare woman for rapid pregnancy risk after removal

Side effects

- Bleeding changes (*above*), some period cramps

Follow-up

- Set recall for change/removal
- Offer regular Adult Health Check (*CPM p123*), STI check – woman (p238), young person (p243)

Do not use copper IUD if

- Unexplained abnormal vaginal bleeding
- Current active uterine or pelvic infection (eg chlamydia, gonorrhoea, PID, septic abortion)
- 48 hours to 4 weeks after birth of baby (postpartum)
- Gestational trophoblastic disease
- Endometrial and ovarian cancer, waiting for treatment
- Severe uterine distortion
- Very low platelet levels (severe thrombocytopenia)
- Allergic to copper

IUD management

IUD insertion

Preparation

- Usually inserted in clinic
- Before insertion
 - STI check – woman (p238), young person (p243)
 - Presumptive treatment for STI (p240) recommended if under 25 years
 - Cervical screening (p289) up to date
 - Check that woman is not pregnant. See *Pregnancy testing* (p279)
- Make appointment to insert at appropriate time. Consider other effective contraceptive methods for short-term cover (p336)

Follow-up

- Inserter usually organises to review 1–6 weeks after insertion
- After this
 - Suggest feeling for threads after each period. If not felt — see *Lost threads* (p347)
 - Set recall for change/removal

IUD removal

Removed by eligible practitioner — by gently pulling on IUD threads.

- Minimal discomfort
- Rapid return to fertility

IUD complications

Lost threads

If strings can't be felt/seen —

- When were they last felt/seen
- Exclude pregnancy ([p279](#))
- Offer ECP ([p353](#)), talk with woman about starting extra, reliable contraception
- **Medical consult**, ultrasound

PID or STI

- **Do not** remove device straight away
 - Mild infections responding to treatment in 48–72 hours don't increase risk
 - If severe infection — **medical consult** straight away
- See *PID* ([p260](#)) or *STI management for women* ([p245](#))

Long-acting contraceptive injection (Depo)

(eg *Depo-Provera*, *Depo-Ralovera*)

94% 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 — slow. Average 6 months, rarely 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

Quick Start ([p340](#)) — yes

Who benefits

- Women who want long-lasting hormonal contraception without an implant
- Women who want no periods/reduced bleeding
- Women on enzyme-inducing medicines

Special issues

Bleeding

- 80% women have no periods after second injection
- If irregular or heavy bleeding causes trouble — **medical consult**, see *Managing troublesome bleeding on LARC (p348)*

Fertility return

- If pregnancy wanted in next 12–18 months — consider changing method

Side effects

- Can't be reversed once given, but will wear off (after about 3 months)
- Uncommon — headache, mood, bloating, decreased sex drive
- 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 stopped
 - Use with care if under 18 years or over 45 years

Follow-up

- Talk with woman about next injection date
- Set recall for next injection
- Offer regular Adult Health Check (*CPM p123*), STI check – woman (*p238*), young person (*p243*)

Late/missed Depo injections

- Only late if more than 14 weeks since last injection
- Consider emergency contraception
- See *Starting contraception — Quick Start (p340)*

Do not use Depo if

- Absolute risks (contraindications) (*p339*)
- High (relative) risks (*p340*)
- Very low platelet levels (severe thrombocytopenia)

Managing troublesome bleeding on LARC

- Exclude other causes. See *Abnormal vaginal bleeding in non-pregnant women (p301)*
- Reassure woman that it isn't harmful
- Try medicines
 - COC taken continuously or cyclically for 3 months, if no contraindications
 - Mefenamic acid oral 2–3 times (bd–tds) a day for 5 days – adult 500mg, if no contraindications to NSAIDs
 - If bleeding heavy — tranexamic acid oral twice a day (bd) for 5 days – adult 500mg
- If medicines don't work — try a different contraception method

Contraceptive pills

Combined oral contraceptive (COC)

92% effective

What — oral pill with oestrogen and progestogen hormones

Types — several equally effective hormone combinations, different cost and side effects

- Start woman on PBS available version — less than 35microgram oestradiol with LNG or NE (see packet)

How it works — prevents ovulation. Regulates cycle with artificial 'periods'

Prescription — must be prescribed by eligible practitioner. Some on PBS

Timing — 1 pill taken every 24 hours, best taken at same time each day

Fertility return — rapid, within 1 menstrual cycle

Packet

- 28 tablets — LNG/NE has 21 'active' + 7 'sugar/inactive' 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

Quick Start (p340) — yes

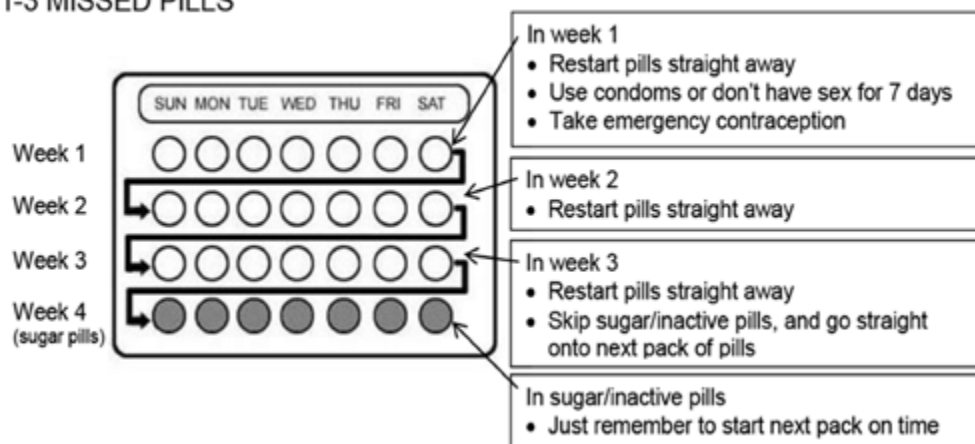
- Take 1 active pill every day for 7 days to give contraception

Missed pill — see F 8.1

Who benefits

- Women who are good pill-takers, want period control or less pain
- Some women find some COCs help improve acne and mood
- Can be used by breastfeeding mothers when child over 6 weeks

1-3 MISSED PILLS



8.1



Special issues

Not as effective as LARC (COC 92% – LARC 99+%)

Bleeding

- COC allows women to safely skip periods (by missing 'sugar/inactive' pills)

Diarrhoea/vomiting

- Only important if severe diarrhoea or vomiting less than 2 hours after taking COC
 - Advise no sex or use condoms until 1 active pill taken each day for 7 days in a row, after they are better

Surgery

- Stop COC 4 weeks before elective major surgery
- **Medical consult**

Side effects

- Uncommon — sore breasts, bleeding between periods, mood changes, decreased sex drive, nausea
- Usually settle in 3 months
- Can try different COC — **medical consult**

Caution with clot risk

- COC causes small increase in risk of blood clot. Not usually first choice in populations with multiple clot risks ([p340](#))
- **Use LARC where possible**
- **Medical consult** if concerned

Follow-up

- Medical review every year
- 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
- Offer regular Adult Health Check ([CPM p123](#)), STI check – woman ([p238](#)), young person ([p243](#))

Do not use COC if

- Absolute risks (contraindications) ([p339](#))
- High (relative) risks ([p340](#))
- Using medicines reducing effectiveness ([p339](#))

Vaginal ring

92% effective. Expensive

What — polyethylene ring with same oestrogen and progestogen hormones as in COC pills (eg *NuvaRing*)

How it works — prevents ovulation

Prescription — must be prescribed by eligible practitioner

Timing — inserted by woman every 3–4 weeks

Who benefits — useful for woman unable to remember to take COC, but wanting relative advantages of method

Special issues

Same issues as COC ([p349](#)).

Progestogen-only pill (POP)

92% effective

What — oral pill

Type — hormone. 2 types — LNG 30microgram and NE 350microgram

Prescription — must be prescribed by eligible practitioner. Available on PBS

How it works

- Primary effect — thickens cervical mucus preventing sperm penetration
- In 60% of women prevents ovulation, can vary from cycle to cycle

Timing — 1 pill taken at **same time** (within 3 hours) every day

Fertility return — rapid, within 1 menstrual cycle

Packet — 28 tablets, all identical and active, start anywhere

Quick Start ([p340](#)) — yes

- 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 ([p353](#))

Who benefits

- Women with high cardiovascular risk ([CARPA STM p230](#)) or over 40 years
- Women who can't tolerate oestrogen in COC
- Breastfeeding mothers



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

- May be predictable or unpredictable

Diarrhoea/vomiting

- Only important in severe diarrhoea or if they vomit less than 2 hours after taking POP
 - 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 — mood change, bloating, appetite increase

Follow-up

- Medical review every year
- 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
- Offer regular Adult Health Check (*CPM p123*), STI check – woman (*p238*), young person (*p243*)

Do not use POP if

- Absolute risks (contraindications) (*p339*)
- Using medicines that reduce effectiveness (*p339*)

Emergency contraceptive pills (ECP)

85% effective — **Note:** UPA more effective than LNG, especially days 3–5

What — 2 types of oral pill

Type — hormone

- 30microgram UPA (ulipristal acetate)
- OR 1.5mg of LNG (levonorgestrel)

How they work

- Mainly prevent ovulation
- May affect fertilisation, implantation
- Don't affect established pregnancy

Prescription — available over the counter, UPA more expensive than LNG

Timing — use as soon as possible up to 5 days (120 hours) after unprotected sex

Fertility return — quick, next usual ovulation

Packet

- UPA — 1 x 30microgram tablet
- LNG — 1 x 1.5mg tablet or 2 x 0.75mg tablets, depending on manufacturer

Quick Start

- UPA — no. Must wait 5 days before starting hormonal contraceptive
- LNG — yes

Who benefits

- Any woman who has had unprotected sex in the previous 5 days
- Safe to use in women where pregnancy is risky, high cardiovascular risk ([CARPA STM p230](#))

Special issues

- Very safe to use
- **Do not** use for long-term contraception
- If ECP tablets not available locally — **medical consult**. There are older regimes using different quantities of related pills
- Always consider STI check – woman ([p238](#)), young person ([p243](#))

Important differences between UPA and LNG

- If vomits after taking ECP— give **antiemetic** ([CARPA STM p105](#)) and repeat ECP dose
 - UPA — if vomits within 3 hours
 - LNG — if vomits within 2 hours
- Breastfeeding
 - UPA — discard milk for 7 days after taking
 - LNG — OK

- Using enzyme-inducing antiepileptic ([p141](#))
 - UPA — **do not** use
 - LNG — give double dose (eg 2 x 1.5mg tablets)
- Severe liver disease or severe asthma treated with glucocorticoids
 - UPA — **do not** use
 - LNG — OK

Side effects

- Uncommon (1%) — headache, nausea, vomiting
- May get altered vaginal bleeding for some days after use

Follow-up

- **Must** do repeat urine pregnancy test in 4 weeks ([p279](#)) — **high priority recall**
- Ensure ongoing contraception

There are no absolute risks for using ECP.

Always remember the ECP!

Barrier contraception

Condoms

Male condom — **82% effective**, cheap, available over the counter.

Female condom — **79% effective**, more expensive, available over the counter.

What

- Male condom — latex or polyurethane sheath pulled onto erect penis
- Female condom — loose-fitting polyurethane sheath inside vagina or anus

How it works

- Prevents contact between eggs, sperm and some STIs
- Correct use
 - Worn and removed carefully so contents don't spill. See *Male condom demonstration* (p356)
 - 'In date' and stored in cool place
 - Disposed of carefully after use, 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, non-hormonal contraception

Promoting condoms

- Important that condoms are easy to get without shame
- Offer condoms, talk about where they can get more
- Talk with ATSIHPs, appropriate local staff and community members about good places to supply condoms — shop, clinic, garage, council, club, toilets

Special issues

- **Type of male condom**
 - Polyurethane
 - Thinner so may transmit body-heat and sensation better
 - Useful if latex allergy
 - Latex
 - Use water-based lubricant. **Do not** use oil-based lubricant
- **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 — try lubricant
 - Could be latex allergy — try polyurethane condoms
 - Less sensitivity — try polyurethane condoms
 - Check for thrush (candida) (p254) or STI (p238)



• **Breakage/slippage**

- Check they know how to use condoms properly. See *Male condom demonstration (below)*
- Check use-by date, packet intact
- Use lubricant
- Beware of sharp fingernails/teeth
- Check size of condom
- Offer woman ECP ([p353](#))
- Offer both partners STI check – man ([CARPA STM p272](#)), woman ([p238](#)), young person ([p243](#))

Male condom demonstration

Offer to demonstrate how to use condom

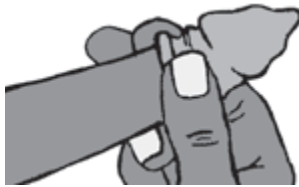
- Check use-by date — F 8.2. Feel condom packet — should be ‘squashy’. Open carefully
- Hold tip of condom, squeeze air from tip — F 8.3
- Roll condom onto erect penis — F 8.4, F 8.5. Show on model of penis
- Use water-based lubricant for anal sex, or if extra lubrication needed for vaginal sex
 - **Do not** use oils or *Vaseline* — weaken rubber



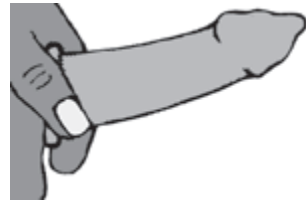
8.2



8.3

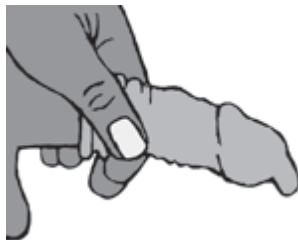


8.4

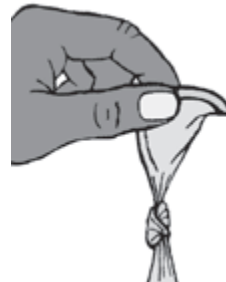


8.5

- After man has ejaculated (‘cum’, passed sperm) while penis still hard, hold condom on penis, take penis out of vagina or anus slowly
- When penis soft, remove condom — F 8.6
- Tie knot in condom — F 8.7, dispose of carefully
- Wipe excess sperm from penis



8.6



8.7

Diaphragms

88% effective. Higher failure rates in fertile women

What — dome-shaped silicone cap inserted in vagina. Non-hormonal

How it works — prevents contact between egg and sperm if used correctly

Timing — inserted before intercourse, left in for 6 hours

- 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



8.8

Permanent sterilisation

Female sterilisation

99.5% effective

What

- Tubal ligation — cutting or clipping tubes
- Tubal occlusion — blocking tubes with metal spring (eg *Essure*)
 - Not commonly available. **Medical/specialist** consult

How it works — prevents egg reaching uterus/sperm. Periods continue

Timing

- Considered permanent
- Needs effective contraception until done

Operation

- Tubal ligation done by specialist in hospital under general anaesthetic
 - Day surgery — laparoscopy
 - If very overweight — laparotomy, with longer hospital stay
 - During Caesarean section
- Tubal occlusion done by hysteroscopy

Reversal — expensive (thousands of dollars) and may not be successful

Complications of operation — rare. Include anaesthetic risk, bleeding, infection

Preparation — make sure cervical screening ([p289](#)), STI check ([p238](#)) up to date

Special issues

- **Talk about**
 - This is permanent — may need several discussions
 - 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
 - Are having relationship difficulties

Remember: LARC are as effective as female sterilisation, especially ENG-implant ([p343](#)) and IUD ([p344](#)), **and** reversible.

Male sterilisation

99.98% effective. Easiest and most effective sterilisation method

What — vasectomy. Cutting, clipping and/or cauterising the sperm tube (vas deferens)

How it works — prevents sperm reaching ejaculate (cum)

Timing

- Considered permanent
- Takes at least 3 months (15 ejaculations) to clear supply of sperm. Effective contraception needed until then

Operation

- Simple, done by doctor/specialist under local anaesthetic
- Complications rare. Include bleeding, infection, swelling

Positives

- Doesn't affect sex drive, erections or cum
- No long-term health issues

Reversal — expensive (thousands of dollars) and may not be successful

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

9 Reference section

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Clinical observations

Approximate normal physiological ranges

Temperature (°C)

- Oral — 36.5–37.5
- Under arm (axillary) — 36–37
- Rectal — 37–37.8
- In ear (tympanic) — 36.8–37.8

Age	Weight (kg)	Pulse (beats/min) Normal range	RR (breaths/min)	BP systolic (mmHg) Lower limit	BP systolic (mmHg) Upper limit	BP diastolic (mmHg) Upper limit
Newborn	3.3	110–160	30–60	–	–	–
3 months	6.2	110–150	30–50	–	–	–
6 months	7.6	110–150	30–50	–	–	–
1 year	9	110–150	20–40	–	–	–
2 years	12	95–140	20–30	–	–	–
4 years	16	95–140	20–25	78	111	69
6 years	20	80–120	20–25	82	112	74
8 years	25	80–120	20–25	86	114	76
10 years	32	80–120	20–25	90	116	80
12 years	40	60–100	16–20	90	122	81
14 years	50	60–100	16–20	90	127	83
17 years+	70+	60–100 Pregnant 80–110	16–20	90	136	83

Antibiotics doses table

This table must be used with protocols from CARPA STM (7th ed) or WBM (6th ed) — it does not provide all the information needed for appropriate antibiotic treatment.
 † = 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.

Presentation	Common uses	Route and frequency	Dosage	Doses										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years	
				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 (16.6mL)	124mg (31mL)	152mg (38mL)	180mg (45mL)	240mg (60mL)	320mg (80mL or 1½ tab – 200mg)	400mg (100mL or 2 tab – 200mg)	500mg (125mL or 2½ tab – 200mg)	640mg (160mL or 3½ tab – 200mg)	800mg (200mL or 1 tab – 800mg)	[#] Mix 200mg dispersible tablet in 50mL water to make 4mg/mL solution. Mix well and use straight away. If weakened immune system – increase dose. If kidney disease – reduce dose.
Albendazole Tab: 200mg, 400mg Pregnancy: D – do not use. Breastfeed: Appears safe.	Hookworm Threadworm Strongyloides Whipworm	Oral Single dose Oral Once a day		N/A		200mg (1 tab – 200mg)	400mg (2 tab – 200mg or 1 tab – 400mg)						Tablets can be chewed or crushed.	

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Presentation	Common uses	Route and frequency	Dosage	Doses										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Amoxicillin [†] Susp: 50mg/mL Cap: 500mg Pregnancy: A – safe to use. Breastfeed: Safe to use.	Dental infection	Oral 3 times a day (tds)	12.5mg/kg/dose	41.25mg (0.9mL)	77.5mg (1.6mL)	95mg (1.9mL)	112.5mg (2.3mL)	150mg (3mL)	200mg (4mL)	250mg (5mL)	312.5mg (6.3mL)	400mg (8mL)	500mg (10mL or 1 cap)	
	Broken jaw	Oral Single dose	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)	
	Nose bleed Sinusitis	Oral 3 times a day (tds)												
	Dental infection	Oral Single dose	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)	
	Otitis media Sinusitis	Oral Twice a day (bd)												
	Pneumonia	Oral 3 times a day (tds)												
	Pneumonia	Oral Twice a day (bd)												
	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)													

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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.

Presentation	Common uses	Route and frequency	Dosage	Doses										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Amoxicillin-clavulanic acid † Susp: 80+11.4mg/mL Tab: 875+125mg Pregnancy: B1 – avoid if PROM. Breastfeed: Caution.	Bite injury Chronic cough CSLD Dental infection Diabetic ulcer Soft tissue injury UTI	Oral Twice a day (bd)	22.5mg/kg/dose	74.25mg (1mL)	139.5mg (1.8mL)	171mg (2.2mL)	202.5mg (2.6mL)	270mg (3.4mL)	360mg (4.6mL)	450mg (5.8mL)	562.5mg (7.2mL)	720mg (9mL)	875mg (11mL or 1 tab)	Doses worked out using amoxicillin component.
	Otitis media	Oral Twice a day (bd)	50mg/kg/dose	165mg (2.2mL)	310mg (4mL)	380mg (4.8mL)	450mg (5.8mL)	600mg (7.6mL)	800mg (10mL)	1g (12.6mL)	1.25g (15.8mL)	1.6g (20mL)	1.75g (22mL or 2 tab)	
Amoxicillin Inj#: 500mg Ampicillin Inj#: 500mg, 1g Pregnancy: A – safe to use. Breastfeed: Safe to use.	Endocarditis prevention Gall bladder	IV Single dose	50mg/kg/dose	165mg (1.8mL)	310mg (3.2mL)	380mg (3.8mL)	450mg (4.6mL)	600mg (6mL)	800mg (8mL)	1g (10mL)	1.25g (12.6mL)	1.6g (16mL)	2g (20mL)	# Mix with WFI to give 100mg/mL — 500mg + 4.7mL, 1g + 9.3mL.
	Dental infection Sepsis	IV Every 6 hours (qid)												

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Presentation	Common uses	Route and frequency	Dosage	Doses										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
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)	* Trachoma doses taken from CDNA trachoma guidelines (2014).
	<i>Shigella</i>	Oral Once a day	5mg/kg/ dose	16.5mg (0.4mL)	31mg (0.8mL)	38mg (1mL)	45mg (1.2mL)	60mg (1.6mL)	80mg (2mL)	100mg (2.6mL)	125mg (3.2mL)	160mg (4mL)	200mg (5mL) 50kg+ 250mg (6.4mL or ½ tab)	
		Oral Single dose	10mg/ kg/dose	33mg (0.9mL)	62mg (1.6mL)	76mg (2mL)	90mg (2.4mL)	120mg (3mL)	160mg (4mL)	200mg (5mL)	250mg (6.4mL or ½ tab)	320mg (8mL)	400mg (10mL) 50kg+ 500mg (12.6mL or 1 tab)	
	Sore throat	Oral Once a day	12mg/ kg/dose	39.6mg (1mL)	74.4mg (2mL)	91.2mg (2.4mL)	108mg (2.8mL)	144mg (3.6mL)	192mg (4.8mL)	240mg (6mL)	300mg (7.6mL)	384mg (9.6mL)	480mg (12mL or 1 tab)	
	CSLD	Oral Once a week	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)		
Benzathine Benzylpenicillin (Bicillin L-A) Inj: 1,200,000U/2.3mL 600,000U/1.17mL syringe* Pregnancy: A – safe to use Breastfeed: Safe	Chickenpox Skin sores Sore throat	Deep IM Single dose		300,000U /0.6mL (225mg)	450,000U/0.8mL (337.5mg)			600,000U /1.17mL*	900,000U /1.8mL (675mg)	1,200,000U/2.3mL (1 x 2.3mL syringe) (900mg)				Long-lasting low levels of penicillin. Do not give for pneumonia. Note: 1,200,000U = 900mg For syphilis dose see STI protocol.
	RHD	Deep IM Every 28 days		600,000U/1.17mL (1 x 1.17mL syringe) (450mg)					1,200,000U/2.3mL (1 x 2.3mL syringe) (900mg)					

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Presentation	Common uses	Route and frequency	Dosage	Doses										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years	
				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.	Pneumonia	IV or IM Single dose	30mg/kg/dose (mixed)	99mg (0.3mL)	186mg (0.6mL)	228mg (0.8mL)	270mg (0.9mL)	360mg (1.2mL)	480mg (1.6mL)	600mg (2mL)	750mg (2.6mL)	960mg (3.2mL)	1.2g (4mL)	# Mix with WFI to give 300mg/mL — 600mg + 1.6mL, 1.2g + 3.2mL. Inject over 5 minutes. Infuse over 30 minutes.
	Pneumonia	IV or IM Every 6 hours (qid)												
	Dental infection	IV Every 6 hours (qid)												
	Meningitis	IV Single dose	60mg/kg/dose (mixed)	198mg (0.7mL)	372mg (1.3mL)	456mg (1.6mL)	540mg (1.8mL)	720mg (2.4mL)	960mg (3.2mL)	1.2g (4mL)	1.5g (5mL)	1.92g (6.4mL)	2.4g (8mL)	
Cefaclor† Susp: 50mg/mL Tab: 375mg Pregnancy: B1 – safe to use. Breastfeed: Safe to use.	CSLD	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 or 1 tab)	500mg (10mL)	625mg (12.6mL)	800mg (16mL or 2 tab)		
Cefalexin† Susp: 50mg/mL Cap: 250mg, 500mg Pregnancy: A – safe to use. Breastfeed: Safe to use.	Water-related infection	Oral Twice a day (bd)	12.5mg/kg/dose	41.25mg (0.9mL)	77.5mg (1.6mL)	95mg (2mL)	112.5mg (2.4mL)	150mg (3mL)	200mg (4mL)	250mg (5mL or 1 cap – 250mg)	312.5mg (6.4mL)	400mg (8mL)	500mg (10mL or 1 cap – 500mg)	
	Boils Diabetic ulcer Soft tissue injury	Oral 4 times a day (qid)												
	Sore throat	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 – 500mg)	625mg (12.6mL)	800mg (16mL)	1g (20mL or 2 cap – 500mg)	

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Presentation	Common uses	Route and frequency	Dosage	Doses										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
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 (3.2mL)	380mg (3.8mL)	450mg (4.6mL)	600mg (6mL)	800mg (8mL)	1g (10mL)	1.25g (12.6mL)	1.6g (16mL)	2g (20mL)	# Mix with normal saline to give 100mg/mL — 500mg + 4.8mL, 1g + 9.6mL, 2g + 19mL. Inject over 3 minutes. Infuse over 30 minutes.
	Cellulitis, skin Soft tissue injury	IV Every 8 hours (tds)												
	Compound fracture Head injury	IV or IO Every 8 hours (tds)												
Cefotaxime Inj [†] : 1g, 2g Pregnancy: B1 – safe to use. Breastfeed: Safe to use.	Sepsis	IV Single dose	50mg/ kg/dose	165mg (1.8mL)	310mg (3.2mL)	380mg (3.8mL)	450mg (4.6mL)	600mg (6mL)	800mg (8mL)	1g (10mL)	1.25g (12.6mL)	1.6g (16mL)	2g (20mL)	# Mix with WFI to give 100mg/mL 1g + 9.6mL, 2g + 19mL. Inject over 3–5 minutes.

This table must be used with protocols from CARPA STM (7th ed) or WBM (6th ed) — it does not provide all the information needed for appropriate antibiotic treatment.														
† = 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.														
Presentation	Common uses	Route and frequency	Dosage	Doses										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years	
				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.	Bowel obstruction Cellulitis, eye Melioidosis Penetrating eye injury Peritonitis Pneumonia Sepsis	IV Single dose	50mg/ kg/dose	165mg (0.7mL)	310mg (1.3mL)	380mg (1.6mL)	450mg (1.8mL)	600mg (2.4mL)	800mg (3.2mL)	1g (4mL)	1.25g (5mL)	1.6g (6.4mL)	2g (8mL)	# Mix to give 250mg/mL — 500mg + 2mL, 1g + 3.5mL, 2g + 7.2mL. IV mix with WFI. IM mix with lidocaine (lignocaine) 1% – not more than 1g in each buttock. Inject (up to 1g) over 3 minutes. Do not mix with Hartmann's solution.
	Chest injury Water-related infection	IV or IM Single dose												
	Pneumonia	IV or IM Once a Day												
	Gonococcal conjunctivitis	IV or IM Single dose	50mg/ kg/dose	125mg (0.5mL)	310mg (1.3mL)	380mg (1.6mL)	450mg (1.8mL)	600mg (2.4mL)	800mg (3.2mL)	1g (4mL)				
	Gall bladder	IV Single dose	50mg/ kg/dose	165mg (0.7mL)	310mg (1.3mL)	380mg (1.6mL)	450mg (1.8mL)	600mg (2.4mL)	800mg (3.2mL)	1g (4mL)				
	Abdominal wound	IV or IM Single dose												
	Bite injury	IV or IM Every 12 hours (bd)												
	Meningitis	IV Single dose	100mg/ kg/dose	N/A	620mg (2.6mL)	760mg (3.2mL)	900mg (3.6mL)	1.2g (4.8mL)	1.6g (6.4mL)	2g (8mL)	2.5g (10mL)	3.2g (12.8mL)	4g (16mL)	

This table must be used with protocols from CARPA STM (7th ed) or WBM (6th ed) — it does not provide all the information needed for appropriate antibiotic treatment. † = 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.														
Presentation	Common uses	Route and frequency	Dosage	Doses										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Ciprofloxacin Tab: 250mg, 500mg, 750mg Inj: 2mg/mL (50mL, 100mL, 200mL) Pregnancy: B3 – not recommended. Breastfeed: Caution.	Diabetic ulcer Soft tissue injury Water-related infection	Oral Twice a day (bd)	12.5mg/kg/dose	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.
Clindamycin Cap: 150mg Inj†: 150mg/mL (2mL, 4mL) 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)		* Mix measured dose with glucose 5% or normal saline to give concentration not more than 12.5mg/mL. Infuse slowly – not more than 30mg/minute	
	Bite injury Cellulitis, skin Diabetic ulcer Soft tissue injury	Oral 3 times a day (tds)	10mg/kg/dose	N/A					150mg (1 cap)		300mg (2 cap)			450mg (3 cap)
	Endocarditis prevention	Oral Single dose	20mg/kg/dose	N/A		150mg (1 cap)			300mg (2 cap)		450mg (3 cap)	600mg (4 cap)		
	Bite injury Dental infection Soft tissue injury	IV Every 8 hours (tds)	10mg/kg/dose	N/A	62mg (0.4mL)	76mg (0.5mL)	90mg (0.6mL)	120mg (0.8mL)	160mg (1.1mL)	200mg (1.4mL)	250mg (1.8mL)	320mg (2.2mL)		400mg (2.8mL) 45kg+ 450mg (3mL)
	Compound fracture Head injury Soft tissue injury	IV Every 8 hours (tds)	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)

This table must be used with protocols from CARPA STM (7th ed) or WBM (6th ed) — it does not provide all the information needed for appropriate antibiotic treatment.

† = 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.

Presentation	Common uses	Route and frequency	Dosage	Doses										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Dicloxacillin Cap: 250mg, 500mg Pregnancy: B2 – safe to use. Breastfeed: Safe to use.	Boils	Oral 4 times a day (qid) <i>OR</i> Twice a day (bd) with probenecid	12.5mg/kg/dose	N/A						250mg (1 cap – 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)
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 or 1 cap – 50mg)		100mg (1 tab or 1 cap – 100mg)		
	Water-related infection	Oral Twice a day (bd)		N/A						100mg (1 tab or 1 cap – 100mg)		150mg (3 tab or 3 cap – 50mg)		
	Dental infection Water-related infection	Oral Single dose	4mg/kg/dose	N/A						100mg (1 tab or 1 cap – 100mg)		150mg (3 tab or 3 cap – 50mg) 50kg+ 200mg (2 tab or 2 cap – 100mg)		
Famciclovir† Tab: 125mg, 250mg Pregnancy: B1 – aciclovir safer. Breastfeed: Safe to use.	Chickenpox Shingles	Oral 3 times a day (tds)	5mg/kg/dose	N/A						125mg (1 tab – 125mg)		250mg (1 tab – 250mg)		

This table must be used with protocols from CARPA STM (7th ed) or WBM (6th ed) — it does not provide all the information needed for appropriate antibiotic treatment. † = 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.														
Presentation	Common uses	Route and frequency	Dosage	Doses										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years	
				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.	Boils	Oral 4 times a day (qid) <i>OR</i> Twice a day (bd) with probenecid	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).
	Nappy rash	Oral 4 times a day (qid)												
	Endocarditis prophylaxis	Oral Single dose	25mg/kg/dose	N/A	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)	
	Cellulitis, eye 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)	

This table must be used with protocols from CARPA STM (7th ed) or WBM (6th ed) — it does not provide all the information needed for appropriate antibiotic treatment.
 † = 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.

Presentation	Common uses	Route and frequency	Dosage	Doses										Notes	
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years		
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+		
Gentamicin† Inj [†] : 40mg/mL Pregnancy: D – specialist advice. Breastfeed: Safe to use.	Mastoiditis	IV Single dose	7.5mg/ kg/dose up to 320mg	Medical consult	46.5mg (1.2mL)	57mg (1.5mL)	67.5mg (1.8mL)	90mg (2.4mL)	120mg (3mL)	150mg (3.8mL)	187.5mg (4.8mL)	240mg (6mL)	N/A	# Mix measured dose with 100mL normal saline. IV push over 3–5 minutes. Infuse over 15 minutes.	
	Melioidosis	IM Single dose													
	Pneumonia	IV or IM Single dose													
	Gall bladder	IV Single dose	5mg/ kg/dose	N/A										200mg (5mL) 50kg 250mg (6.4mL) 60kg 300mg (7.6mL) 70kg 350mg (8.8mL)	If kidney failure — specialist consult. No maximum adult dose — continue to calculate dose by weight. If obese — medical consult about adjusted dose.
	Intrauterine infection														
	Mastoiditis	IV or IM Single dose													
	Melioidosis														
Pneumonia	IV Once a day														
Postpartum haemorrhage															
UTI	IV or IM Single dose														
Intrauterine infection	IV Once a day														
Postpartum haemorrhage															
Uterus infection															

This table must be used with protocols from CARPA STM (7th ed) or WBM (6th ed) — it does not provide all the information needed for appropriate antibiotic treatment. † = 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.															
Presentation	Common uses	Route and frequency	Dosage	Doses										Notes	
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years		
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+		
Ivermectin Tab: 3mg Pregnancy: B3 – avoid use. Breastfeed: May be used.	Scabies Strongyloides	Oral Single dose	200micro-gram/ kg/dose	N/A							1 tab	2 tab		3 tab 60kg 4 tab 70kg 5 tab 80kg+ 6 tab	Do not give to children under 5 years, or less than 15kg. Best with full cream milk or fatty food.
	Crusted scabies	Oral Once a day													
Metronidazole † Susp: 40mg/mL Tab: 200mg, 400mg Inj: 5mg/mL Pregnancy: B2 – safe to use. Breastfeed: Safe to use.	Broken jaw	Oral Single dose	10mg/ kg/dose	33mg (0.8mL)	62mg (1.6mL)	76mg (2mL)	90mg (2.4mL)	120mg (3mL)	160mg (4mL)	200mg (5mL or 1 tab – 200mg)	250mg (6.4mL)	320mg (8mL or 1½ tab – 200mg)	400mg (10mL or 1 tab – 400mg)	Must not drink alcohol while taking and for 24 hours after. If pregnant or breastfeeding — give divided doses. If severe liver disease — reduce dose.	
	Dental infection Diabetic ulcer Soft tissue injury	Oral Twice a day (bd)													
	<i>Giardia</i>	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)	1.2g (3 tab – 400mg) 50kg 1.6g (4 tab – 400mg) 60kg+ 2g (5 tab – 400mg)		
	Gall bladder	IV Single dose	12.5mg/ kg/dose	41.25mg (8.4mL)	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 injury	IV Twice a day (bd)													

This table must be used with protocols from CARPA STM (7th ed) or WBM (6th ed) — it does not provide all the information needed for appropriate antibiotic treatment.														
† = 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.														
Presentation	Common uses	Route and frequency	Dosage	Doses										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Phenoxyethylpenicillin† Susp: 50mg/mL (250mg/5mL) Cap: 500mg Pregnancy: A – safe to use. Breastfeed: Safe to use.	Dental infection Cellulitis, skin	Oral 4 times a day (qid)	12.5mg/kg/dose	41.25mg (0.83mL)	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)	
	Sore throat	Oral Twice a day (bd)	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)	
Praziquantel Tab: 600mg Pregnancy: B1 – appears safe. Breastfeed: Safe to use.	Dwarf tapeworms	Oral Single dose	25mg/kg/dose	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.
Probenecid Tab: 500mg Pregnancy: B2 – specialist advice. Breastfeed: Specialist advice.	Boils	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.
Procaine benzylpenicillin (procaine penicillin) Inj: 1.5g (3.4mL syringe) Pregnancy: A – safe to use. Breastfeed: Safe to use.	Bites	Deep IM Single dose	50mg/kg/dose	165mg (0.4mL)	310mg (0.7mL)	380mg (0.9mL)	450mg (1.1mL)	600mg (1.4mL)	800mg (2mL)	1g (2.4mL)	1.25g (3mL)	1.5g (3.4mL)		Shake well. Put into another syringe to measure small doses accurately.
	Bites Cellulitis, skin Nappy rash Pneumonia	Deep IM Once a day												

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Presentation	Common uses	Route and frequency	Dosage	Doses										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Pyrantel Susp: 50mg/mL Tab: 125mg, 250mg Choc sq: 100mg Pregnancy: B2 – safe to use. Breastfeed: Safe to use.	Threadworm	Oral Single dose	10mg/kg/dose	N/A				120mg (2.4mL or 1 tab – 125mg)	160mg (3.2mL or 1½ sq – 125mg)	200mg (4mL or 2 sq or 1½ tab – 125mg)	250mg (5mL or 2½ sq or 1 tab – 250mg)	320mg (6.4mL or 3 sq)	400mg (4 sq or 3 tab – 125mg)	Tablet can be crushed. Can be given to children under 6 months, females who are or could be pregnant.
	Hookworm	Oral Once a day	10mg/kg/dose										60kg 600mg (6 sq or 5 tab – 125mg) 80kg 800mg (3 tab – 250mg) 100kg+ 1g (4 tab – 250mg)	
Roxithromycin Tab: 50mg (disp), 150mg, 300mg Susp: 10mg/mL# Pregnancy: B1 – safe to use. Breastfeed: Safe to use. <i>Use if penicillin allergy.</i>	Pneumonia Sinusitis	Oral Twice a day (bd)	4mg/kg/dose	N/A	24.8mg (2.6mL or ½ tab – 50mg)	30.4mg (3.2mL)	36mg (3.6mL)	48mg (4.8mL or 1 tab – 50mg)	64mg (6.4mL)	80mg (8mL)	100mg (2 tab – 50mg)	125mg (2½ tab – 50mg)	150mg* (1 tab – 150mg)	If severe liver disease – halve dose. # Mix 50mg dispersible tablet with 5mL water to make 10mg/mL solution. Mix well and use straight away. * Adults – 150mg twice a day or 300mg once a day.

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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.

Presentation	Common uses	Route and frequency	Dosage	Doses										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Tinidazole Tab: 500mg Pregnancy: B3 – metronidazole safer. Breastfeed: Avoid – metronidazole safer.	<i>Giardia</i> Gingivitis	Oral Single dose	50mg/kg/dose	125mg (¼ tab)	250mg (½ tab)	375mg (¾ tab)	500mg (1 tab)	625mg (1¼ tab)	750g (1½ tab)	1g (2 tab)	1.2g (2½ tab)	1.5g (3 tab)	2g (4 tab)	If pregnant – give divided doses. Tablet can be crushed. Can repeat in 24–48 hours. Children don't like the taste.
Trimethoprim-sulfamethoxazole † Susp: 8+40mg/mL (40+200mg/5mL) Tab: 160+800mg Pregnancy: C – avoid use. Breastfeed: Caution.	Otitis media Skin sores UTI	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.
	Melioidosis	Oral Twice a day (bd)	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)	240mg (30mL or 1½ tab)	
Valaciclovir Tab: 500mg, 1g Pregnancy: B3 – appears safe but aciclovir preferred. Breastfeed: Safe to use.	Chickenpox Shingles	Oral 3 times a day (tds)	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)	

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Presentation	Common uses	Route and frequency	Dosage	Doses										Notes
				New-born	3 months	6 months	1 year	2 years	4 years	6 years	8 years	10 years	12+ years	
				3.3kg	6.2kg	7.6kg	9kg	12kg	16kg	20kg	25kg	32kg	40kg+	
Vancomycin† Inj [†] : 500mg, 1g Pregnancy: B2 – safe to use. Breastfeed: Safe to use. <i>Use if penicillin allergy.</i>	Endocarditis prevention	IV Single dose	15mg/kg/dose	49.5mg (1mL)	93mg (2mL)	114mg (2.4mL)	135mg (2.8mL)	180mg (3.6mL)	240mg (4.8mL)	300mg (6mL)	375mg (7.5mL)	480mg (9.6mL)	600g (12mL) 50kg 750mg (15mL) 60kg 900mg (18mL) 70kg 1.05g (21mL)	[#] Mix with WFI to make 50mg/mL — 500mg + 10mL, 1g + 20mL. Infuse over 1–2 hours. If kidney failure — specialist consult. No maximum dose — continue to calculate dose by weight.

For more information and details on giving antibiotics see *AMH, Therapeutic Guidelines, Medicines Book*.

Note: ‘Common uses’ provides examples only and doesn’t include all conditions the medicines can be used for.

Use in pregnancy and breastfeeding

For more information on using medicines when a woman is pregnant or breastfeeding, contact your closest Pregnancy Drug Information Centre.

Australian categories for use of medicines in pregnancy

‘Harm’ means birth defects or other direct or indirect harm to fetus. For more detail see *AMH* or *Therapeutic Guidelines*.

Category A: Have been taken by a large number of pregnant women and women of childbearing age without any known harm.

Category B1: Have been taken by a limited number of pregnant women and women of childbearing age without any known harm. Animal studies have not shown harm.

Category B2: Women as for B1. Animal studies are poor quality or lacking, but no evidence of harm in available data.

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 harm but not malformations. Effects may be non–permanent.

Category D: Have caused or are suspected of causing permanent harm.

Category X: Have such a high risk of causing permanent harm that they should not be used in women who are or could be pregnant.

Note:

- Category D medicines are not always contraindicated for use in pregnant women. The risks and benefits need to be discussed
- The categories of medicine are not hierarchical, eg the allocation of B category does not imply greater safety than C category

Other medicines doses table

This table must be used with protocols from CARPA STM (7th ed) or WBM (6th ed) — it does not provide all the information needed for appropriate treatment.
 † = 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.

Presentation	Common uses	Route and frequency	Dosage	Doses											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	0.02mg/kg/dose	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 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 (1.6mL)	7.5mg (2mL)	Inject over 1–3 minutes.	
Hydrocortisone Inj: 50mg/mL Pregnancy: A – safe, but use lowest dose for shortest time. Breastfeed: Safe to use, avoid high dose.	Meningitis	IV Single dose	4mg/kg/dose	13.2mg (0.26mL)	24.8mg (0.5mL)	30.4mg (0.6mL)	36mg (0.7mL)	48mg (1mL)	64mg (1.4mL)	80mg (1.6mL)	100mg (2mL)	128mg (2.6mL)	160mg (3.2mL)	200mg (4mL)	Inject over 1 minute.	
	Severe asthma	IV IM if no IV access Single dose	4mg/kg/dose	13.2mg (0.26mL)	24.8mg (0.5mL)	30.4mg (0.6mL)	36mg (0.7mL)	48mg (1mL)	64mg (1.4mL)	80mg (1.6mL)	100mg (2mL)					

This table must be used with protocols from CARPA STM (7th ed) or WBM (6th ed) — it does not provide all the information needed for appropriate treatment. † = 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.															
Presentation	Common uses	Route and frequency	Dosage	Doses											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+	
Ibuprofen † Susp: 20mg/mL Tab: 400mg Pregnancy: C – avoid. Breastfeed: Safe to use.	Dental pain Redback spider	Oral 3 times a day (tds)	10mg/kg/dose	N/A		76mg (3.8mL)	90mg (4.6mL)	120mg (6mL)	160mg (8mL)	200mg (10mL)	250mg (12.6mL)	300mg (15mL)	400mg (1 tab)		
Iron Susp: 30mg/mL ferrous sulfate Tab: 80–105mg Pregnancy: A – safe to use Breastfeed: Safe to use	IDA	Oral Once a day		1mL	5mL		10mL		15mL		80–105mg (1 tab)				1mL of 30mg/mL ferrous sulfate susp gives 6mg elemental iron (20%).
Levetiracetam † Inj [†] : 100mg/mL (5mL) Pregnancy: B3 – get advice Breastfeed: Safe to use	Head injury	IV Loading dose	20mg/kg/dose	66mg (0.66mL)	124mg (1.24mL)	152mg (1.6mL)	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%. Infuse over 30 minutes.
Naloxone Inj [†] : 0.4mg/mL (1mL, 5mL) Pregnancy: B1 – do not use if woman opioid-dependent. Breastfeed: May be used.	Over-sedation (opioids)	IV	0.01mg/kg/dose	0.03mg (0.3mL)	0.06mg (0.6mL)	0.76mg (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.	

This table must be used with protocols from CARPA STM (7th ed) or WBM (6th ed) — it does not provide all the information needed for appropriate treatment.															
† = 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.															
Presentation	Common uses	Route and frequency	Dosage	Doses											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+	
Ondansetron † Wafer: 4mg, 8mg Pregnancy: B1 – safe after first trimester. Breastfeed: Caution.	Head injuries Nausea + vomiting	Oral		N/A			2mg (½ wafer – 4mg)			4mg (1 wafer – 4mg)			8mg (1 wafer – 8mg)		Best antiemetic when sedation not wanted. Always do medical consult for children.
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 (1mL)	93mg (2mL)	114mg (2.4mL)	135mg (3mL)	180mg (3.8mL)	250mg (5.2mL or ½ tab)		500mg (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 Tab: 5mg, 25mg Pregnancy: A – safe, but use lowest dose for shortest time. Breastfeed: Safe to use*.	Asthma	Oral Once a day	1mg/kg/dose	3.3mg (0.7mL)	6.2mg (1.3mL)	7.6mg (1.6mL)	9mg (1.8mL)	12mg (2.4mL)	16mg (3.2mL)	20mg (4mL)	25mg (5mL or 1 tab – 25mg)	32mg (6.4mL or 6 tab – 5mg)	40mg (8mL or 8 tab – 5mg)	50mg (10mL or 2 tab – 25mg)	*Take after breastfeed and wait 4 hours before next feed.

This table must be used with protocols from CARPA STM (7th ed) or WBM (6th ed) — it does not provide all the information needed for appropriate treatment. † = 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.															
Presentation	Common uses	Route and frequency	Dosage	Doses											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+	
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 antiemetic if sedation needed. Always do medical consult for children.
	Nausea + vomiting Sedation	Oral		N/A				3mg (0.12mL)	4mg (0.16mL)	5mg (0.2mL)	6.25mg (0.25mL)	8mg (0.32mL)	10mg (0.4mL)	12.5mg (0.5mL)	
	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 (0.32mL)	10mg (0.4mL)	12.5mg (0.5mL)	
Valproate † Inj*: 400mg Pregnancy: D – avoid if possible. Breastfeed: Appears safe.	Fits	IV or IO Single dose	20mg/kg/dose	N/A	124mg (1.4mL)	152mg (1.6mL)	180mg (2mL)	240mg (2.6mL)	320mg (3.4mL)	400mg (4.4mL)	500mg (5.4mL)	640mg (6.8mL)	800mg (8.6mL)	# Mix with solvent provided to give 95mg/mL — 400mg + 4mL. Inject over 3–5 minutes.	
		Infusion	1.6mg/kg/hr	N/A	9.92mg (2.6mL)	12mg (3mL)	14.4mg (3.6mL)	19.2mg (4.8mL)	25.6mg (6.4mL)	32mg (8mL)	40mg (10mL)	51.2mg (12.8mL)	64mg (16mL)	80mg (20mL) 60kg 96mg (24mL) 65kg+ 104mg (26mL)	# Mix with normal saline to give 4mg/mL — 400mg + 100mL.

For more information and details on giving antibiotics see *AMH, Therapeutic Guidelines, Medicines Book*.

Note: ‘Common uses’ provides examples only and doesn't include all conditions the medicines can be used for.

Use in pregnancy and breastfeeding

For more information on using medicines when a woman is pregnant or breastfeeding, contact your closest Pregnancy Drug Information Centre.

Australian categories for use of medicines in pregnancy

'Harm' means birth defects or other direct or indirect harm to fetus. For more detail see *AMH* or *Therapeutic Guidelines*.

Category A: Have been taken by a large number of pregnant women and women of childbearing age without any known harm.

Category B1: Have been taken by a limited number of pregnant women and women of childbearing age without any known harm. Animal studies have not shown harm.

Category B2: Women as for B1. Animal studies are poor quality or lacking, but no evidence of harm in available data.

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 harm but not malformations. Effects may be non-permanent.

Category D: Have caused or are suspected of causing permanent harm.

Category X: Have such a high risk of causing permanent harm that they should not be used in women who are or could be pregnant.

Note:

- Category D medicines are not always contraindicated for use in pregnant women. The risks and benefits need to be discussed
- The categories of medicine are not hierarchical, eg the allocation of B category does not imply greater safety than C category

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 20mg, 30mg, 60mg tablets — controlled 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

*Blood products have a short shelf-life. If looking after pregnant woman who is hepatitis B positive or RhD negative — make sure immunoglobulin in stock.

Abbreviations

°	degree	CDNA	Communicable Disease Network Australia
%	percent	CIN	cervical intraepithelial neoplasm
ABC	airway, breathing, circulation	CIN 2/3	cervical intraepithelial neoplasm grade 2 or 3
ACE	angiotensin-converting enzyme	CKD	chronic kidney disease
ACR	albumin creatinine ratio	cm	centimetre
ACW	Aboriginal community worker	COC	combined oral contraceptive pill
AF	arterial fibrillation	COPD	chronic obstructive pulmonary disease
AIDS	acquired immunodeficiency syndrome	CPM	Clinical Procedures Manual
AIS	adenocarcinoma-in-situ	CPR	cardiopulmonary resuscitation
anti-D	Rh D immunoglobulin	CRP	c-reactive protein
Anti-HBc	hepatitis B core antibody	CST	cervical screening test
Anti-HBe	hepatitis B envelope antibody	CTG	cardiotocogram
Anti-HBs	hepatitis B surface antibody	CVD	cardiovascular disease
Anti-HCV	hepatitis C antibody	CVS	chorionic villus sampling
APTT	activated partial thromboplastin time	D&C	dilation and curettage
ARB	angiotensin II receptor blockers	Depo	medroxyprogesterone depot injection
ARF	acute rheumatic fever	DHEAS	dehydroepiandrosterone sulphate
ART	assisted reproductive technology	DiDi	dichorionic diamniotic
ATSIHP	Aboriginal and Torre Strait Islander health practitioner	DNA	deoxyribonucleic acid
BCG	Bacille Calmette Guérin	DOB	date of birth
bd	bis die – twice a day	DVT	deep vein thrombosis
BGL	blood glucose level	E₂	oestradiol
BMI	body mass index	ECG	electrocardiogram
BP	blood pressure	ECHO	echocardiogram
BV	bacterial vaginosis	ECP	emergency contraceptive pill
C	centigrade	EDB	estimated date of birth
cap	capsule	EDTA	ethylenediaminetetraacetic acid
CARPA	Central Australian Rural Practitioners Association	eg	exempli gratia – for example
CARPA STM	CARPA Standard Treatment Manual	eGFR	estimated glomerular filtration rate
CDC	Centre for Disease Control, Communicable Disease Control Branch, Communicable Disease Control Directorate	ENG	etonogestrel
		EPDS	Edinburgh Postnatal Depression Scale
		etc	et cetera – and so forth



Abbreviations

F	figure	IO	intraosseous (in the bone)
F	French gauge	IR	immediate release
FBC	full blood count	IUD	intrauterine device
fL	femtoliters	IUGR	intrauterine growth restriction
FNA	fine needle aspiration	IV	intravenous (in the vein)
FRA-BOC	familial risk assessment - breast and ovarian cancer	IVF	in-vitro fertilisation
FSH	follicle stimulating hormone	kg	kilogram
G	gauge	L	litre
g	gram	LARC	long-acting reversible contraceptive
GBS	Group B Streptococcus	LBC	liquid based cytology
GDM	gestational diabetes mellitus	LEEP	loop electrosurgical excision procedure
GP	general practitioner	LFT	liver function test
H₂	histamine 2	LH	luteinising hormone
HAVIgG	hepatitis A immunoglobulin G antibodies	LLETZ	large loop excision of the transformation zone
Hb	haemoglobin	LMP	last menstrual period
HbA1c	glycated haemoglobin	LNG	levonorgestrel
HBeAG	hepatitis B envelope antigen	LNMP	last normal menstrual period
HBsAg	hepatitis B surface antigen	LSIL	low-grade squamous intraepithelial lesion
HBV	hepatitis B virus	LVS	low vaginal swab
hCG	human chorionic gonadotrophin	MC&S	microscopy, culture, and sensitivity
HCV	hepatitis C virus	MCV	mean cell volume
HIV	human immunodeficiency virus	MeHR	My eHealth Record
HPV	human papillomavirus	mg	milligram
hr	hour	microl	microlitre
HRT	hormone replacement therapy	min	minute
HSIL	high-grade squamous intraepithelial lesion	mL	millilitre
HSV	herpes simplex virus	mm	millimetre
HVS	high vaginal swab	mmHg	millimetre of mercury
hypo	hypoglycaemic episode	mmol	millimole
ICU	intensive care unit	MMR	measles, mumps, rubella (vaccination)
IDA	iron deficiency anaemia	MoDi	monochorionic diamniotic
IM	intramuscular (in the muscle)	mol	mole
inj	injection	MoMo	monochorionic monoamniotic
INR	international normalised ratio		

MSU	mid-stream urine	Rh	Rhesus
N/A	not applicable	RhD	Rhesus D antigen
NAAT	nucleic acid amplification test	RHD	rheumatic heart disease
NE	norethisterone	RhD-Ig	Rhesus D immunoglobulin
NPY	Ngaanyatjarra, Pitjantjatjara and Yankunytjatjara	RNA	ribonucleic acid
NSAID	non-steroidal anti-inflammatory drug	RPR	rapid plasma reagin
NT	Northern Territory	RR	respiratory rate
NTD	neural tube defect	SARC	Sexual Assault Referral Centre
O₂	oxygen	SHBG	sex hormone binding globulin
O₂ sats	oxygen saturation	SIDS	sudden infant death syndrome
OGTT	oral glucose tolerance test	SLE	systemic lupus erythematosus
OROS	osmotic-controlled release oral delivery system	SNRI	serotonin and noradrenaline reuptake inhibitors
p	page	SSRI	selective serotonin reuptake inhibitors
PBS	Pharmaceutical Benefits Scheme	STI	sexually transmitted infection
PCEHR	personally controlled electronic health record	subcut	subcutaneous (under the skin)
PCOS	polycystic ovary syndrome	susp	suspension
PDM	pre-existing diabetes mellitus	SWSBSC	Strong Women, Strong Babies, Strong Culture
PE	pulmonary embolus	T	temperature
pHSIL	possible high-grade squamous intraepithelial lesion	tab	tablet
PHU	Public Health Unit	tds	ter die sumendum – 3 times a day
PID	pelvic inflammatory disease	temp	temperature
pLSIL	possible low-grade squamous intraepithelial lesion	TFT	thyroid function test
POC	point of care	TOP	termination of pregnancy
POP	progesterone-only pill	TSH	thyroid stimulating hormone
PPE	personal protective equipment	TTTS	twin-to-twin transfusion syndrome
PPROM	preterm premature rupture of membranes	TZ	transformation zone
PROM	premature rupture of membranes	U/A	urinalysis (with dipstick)
qid	quarter in die – 4 times a day	UEC	urea, electrolytes, creatinine
QLD	Queensland	UTI	urinary tract infection
REWS	remote early warning score	VIN	vulval intraepithelial neoplasia
RFDS	Royal Flying Doctor Service	VTE	venous thromboembolism
		WA	Western Australia
		WBM	<i>Women's Business Manual</i>
		WFI	water for injection

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