PHC Chapter 6: Obstetrics & gynaecology

Obstetrics

OBSTETRICS

6.1 BLEEDING IN PREGNANCY

6.1.1 PREGNANCY, ECTOPIC

See Section 6.10: Pregnancy, ectopic.

6.2 MISCARRIAGE

O02.1/O03.4/O03.9

DESCRIPTION

Bleeding from the genital tract <22 weeks' gestation, which may or may not be associated with lower abdominal pain (LAP).

» Miscarriage is classified as follows:

Cervix closed on digital examination	Cervix dilated on digital examination
» Threatened miscarriage: – mild vaginal bleeding, usually no associated LAP » fetus is still in the uterus	» Inevitable miscarriage: – moderate vaginal bleeding with associated LAP » fetus is still in the uterus
» Complete miscarriage: – complete passage of all products of conception – bleeding and pain have settled – usually still requires referral for confirmation	» Incomplete miscarriage: – vaginal bleeding often with clots – partial expulsion of products of conception

» Miscarriage is considered to be safe or unsafe (septic) miscarriage:

Safe miscarriage	Unsafe (septic) miscarriage
– Normal vital signs: pulse, BP, temperature, respiratory rate, Hb – No clinical signs of infection, e.g. chills, malaise – Uterus <12 weeks in size – No offensive products of conception – No purulent vaginal discharge	– History of interference – Abnormal vital signs: any of tachycardia, hypotension, pyrexia, tachypnoea, pallor – Persistent heavy bleeding – Clinical signs of infections, e.g. chills, malaise – Uterus palpable abdominally (≥ 12 weeks in size) – Offensive vaginal discharge/ products of conception

For perinatal mortality audit and statistics (DHIS or PPIP), all fetuses ≥500 g are included.

GENERAL MEASURES

» Monitor vital parameters, e.g. Hb, pulse, BP, temperature.
» Treat for shock if indicated.
» Counselling and support.

» There is no specific treatment for threatened miscarriages: reassure the patient that bleeding usually stops spontaneously. Advise to return if bleeding worsens or persists or abdominal pain develops.

MEDICINE TREATMENT

For inevitable/incomplete miscarriages:

- Oxytocin, IV, 20 units, diluted in 1000 mL sodium chloride 0.9% and infused at 125 mL/hour (avoid where threatened miscarriage is suspected).

For Rh-negative non-sensitised women from 13 to 22 weeks Anti-D immunoglobulin, IM, 50 mcg preferably within 72 hours but may be given up to 7 days following management of miscarriage.

If unsafe (septic) miscarriage is suspected, also give before referral:

O03.0/O08.0 + (A41.9/R57.2)

- Ceftriaxone, IV, 1 g as a single dose

CAUTION: USE OF CEFTRIAXONE

Do not administer calcium-containing fluids, e.g. Ringer's Lactate, concurrently with ceftriaxone.

AND

- Metronidazole, oral, 400 mg as a single dose.

REFERRAL

Urgent

» All patients with unsafe miscarriage
» Suspected ectopic pregnancy.
» Previous miscarriage or previously diagnosed incompetent cervix.

Note: For patients with safe miscarriage the need for referral is determined by skills and facilities at the primary health care level. A local referral policy should be in place. Ideally, midwife obstetric units and community health centres should be able to manage safe miscarriage using manual vacuum aspiration or medical management.

6.2.1 MANAGEMENT OF INCOMPLETE MISCARRIAGE IN THE 1ST TRIMESTER, AT PRIMARY HEALTH CARE LEVEL

O02.1/O03.4

Both Manual Vacuum Aspiration (MVA) and medical evacuation are equally effective for miscarriage.

GENERAL MEASURES

» Counselling.
» Evacuation of the uterus.

MEDICINE TREATMENT

Medical evacuation:

- Misoprostol, SL/PV/buccal, 800 mcg immediately as a single dose.
  - Repeat after 24 hours if necessary.

LoE:IIIb[1]

Manual vacuum aspiration:

Routine analgesia for vacuum aspiration:

- Morphine, IM, 0.1 mg/kg 30 minutes before aspiration procedure, to a maximum of 10 mg (Doctor prescribed).

LoE:IVb[2]

Alternatively, consider paracervical block if trained in technique. See the Adult Hospital Level STGs and EML, Section 5.9.1: TOP: Management of pregnancies up to the Twelfth week of gestation (12 weeks and 0 days)

Oral analgesia as required for 48 hours:

- Paracetamol, oral, 500 mg–1 g, 4–6 hourly as required (to a maximum of 4 g in 24 hours).
  - Maximum dose: 15 mg/kg/dose.

AND

- Ibuprofen, oral, 400 mg 8 hourly with or after a meal, for 2 to 3 days.

Follow up after one week to ensure that bleeding has stopped, or sooner if worsening symptoms.
Perform a pregnancy test three weeks after medical management.

LoE:IIIb[3]

REFERRAL

» Unsafe miscarriage.
» Miscarriage ≥13 weeks' gestation.
» Anaemia.
» Haemodynamic instability.
» Failed medical evacuation
» Positive pregnancy test 3 weeks after medical management.

6.2.2 ANTEPARTUM HAEMORRHAGE

O46.0/O46.8-9

DESCRIPTION

Vaginal bleeding in pregnancy from 22 weeks' gestation.
Important causes include the following:
» abruptio placentae,
» placenta praevia,
» uterine rupture (particularly when misoprostol was used to attempt an unlawful TOP).

GENERAL MEASURES

» Monitor vital parameters, e.g. Hb, pulse, BP, temperature.
» Treat for shock if indicated.
Avoid digital vaginal examination, unless placenta praevia excluded with ultrasound.

MEDICINE TREATMENT

- Sodium chloride 0.9%, IV.

REFERRAL

Urgent

All patients.

6.3 TERMINATION OF PREGNANCY (TOP)

DESCRIPTION

Under the Choice of Termination of Pregnancy Act, 1996, as amended, a TOP may be carried out in the following circumstances:

Women eligibility

If gestation ≤ 12 weeks and 0 days:

» On request.

If gestation 12 weeks and 1 day to 20 weeks and 0 days:

If Doctor is satisfied that:

» Pregnancy was from rape or incest, or
» There is a substantial risk that the fetus would suffer from a severe mental or physical abnormality, or
» The continued pregnancy would pose a risk to mother's physical or mental health, or
» Continued pregnancy will significantly affect the social or economic circumstances of the woman.

If gestation ≥20 weeks and 0 day:

» If the Doctor after consulting with a second Doctor or registered midwife or registered nurse is satisfied that continuing the pregnancy would endanger the mothers' life, pose a risk of injury to the fetus, or result in a severe fetal malformation.

Venue

Any facility that has a 24-hour maternity service can provide TOP service without specific designation - *The Choice on Termination of Pregnancy Act, 1996 (as amended by Act 38 of 2004), expanded access to abortions, allows registered nurses, as well as registered midwives, to perform abortions up to the twelfth week of pregnancy.*

Practitioner

If gestation ≤11 weeks and 6 days:

» Doctor, midwife or registered nurse with appropriate training.

If gestation ≥12 weeks and 0 day:

» Doctor is responsible for decision and prescription of medication. Registered nurse/midwife may administer medication according to prescription.

GENERAL MEASURES

» Pre- and post-termination counselling is essential.
» Consent for TOP and related procedures (e.g. laparotomy) may be given by minors. Minors are encouraged to consult parents or others, but parental consent is not mandatory.

» Consent of spouse/partner is not necessary.
» Offer contraception post TOP.

REFERRAL

» If service not available, refer to appropriate district or regional facility as soon as possible (within 2 weeks).
» If gestation ≥12 weeks and 0 day.

6.3.1 MANAGEMENT OF TERMINATION OF PREGNANCY AT PRIMARY HEALTH CARE LEVEL: GESTATION UP TO 12 WEEKS AND 0 DAYS

O04.9

GENERAL MEASURES

» Confirm pregnancy with urine pregnancy test.
» Determine gestational age with ultrasound. If ultrasound is unavailable, use dates (LMP) and bimanual (pelvic) examination.
» If unsure of dates, or examination disagrees with dates, or uterus palpable abdominally, or the woman is obese or difficult to examine, arrange pre-procedure ultrasound.
» Ultrasound is mandatory if suspected ectopic pregnancy – refer if uncertain.
» Counselling.
» Outpatient procedure by nursing staff with specific training.
» Screen for STIs (if treatment needed, do not delay TOP).
» Arrange Pap smear if needed.
» Check HIV status, Hb and blood group (Rh).
» Counsel and start contraception post TOP, before leaving facility. Arrange contraception follow-up.

MEDICINE TREATMENT

Medical TOP - if gestation ≤12 weeks and 0 days:

- Mifepristone, oral, 200 mg, immediately as a single dose. *LoE:IIIb*[4]

Followed 24 to 48 hours later by:

- Misoprostol, SL, 800 mcg by self-administration at home*.
  - If expulsion does not occur within 4 hours of misoprostol administration, a second dose of misoprostol 400 mcg, oral/PV may be given.
  - *From >9 weeks to ≤12 weeks- return to the facility within 48 hours to take misoprostol on-site (early morning) due to the risk of heavy bleeding. *LoE:IIIb*[5]

Note: Bleeding may persist for up to 1 week. If there is no bleeding after the second dose of misoprostol, the woman must return to the facility as soon as possible as there is a possibility of an incomplete procedure or ectopic pregnancy. *LoE:IIIb*[6]

For pain:
After administration of mifepristone, start:
- Paracetamol, oral, 500 mg to 1 g, 4 to 6 hourly as required (to a maximum of 4 g in 24 hours).
  - Maximum dose: 15 mg/kg/dose.

LoE:IVb[7]

ADD

After expulsion is complete:
- Ibuprofen, oral, 400 mg 8 hourly with or after a meal, as needed for 2 to 3 days.

LoE:IVb[8]

OR

TOP using manual vacuum aspiration (MVA) - if gestation ≤12 weeks and 0 days:
- Misoprostol, PV, 400 mcg 3 hours before vacuum aspiration of the uterus.

Routine analgesia for vacuum aspiration:

LoE:IVb[9]

- Morphine, IM, 0.1 mg/kg 30 minutes before aspiration procedure, to a maximum of 10 mg (Doctor prescribed).

LoE:IVb[10]

Alternatively, consider paracervical block if trained in technique. See the Adult Hospital Level STGs and EML, Section 5.9.1: TOP: Management of pregnancies up to the Twelfth week of gestation (12 weeks and 0 days)

Oral analgesia as required for 48 hours:
- Paracetamol, oral, 500 mg to 1 g, 4 to 6 hourly as required (to a maximum of 4 g in 24 hours).
  - Maximum dose: 15 mg/kg/dose.

LoE:IVb[11]

AND
- Ibuprofen, oral, 400 mg 8 hourly with or after a meal, as needed for 2 to 3 days.

Contraception:

LoE:IVb[12]

Counsel all women on effective contraception, especially long-acting reversible methods.
All methods can be given at the time of the procedure, with the exception of the IUCD at a medical TOP.

LoE:IVb[13]

Review all patients after 7 days: if bleeding persists, arrange urgent ultrasound.

REFERRAL
» If gestation ≥12 weeks and 1 day.
» If gestation uncertain.
» If any signs or symptoms of ectopic pregnancy or other early pregnancy complications.
» Co-morbid conditions (heart disease, asthma, diabetes, anaemia, clotting disorder, seizure disorder, substance abuse, hypertension).
» Large fibroids (may interfere with determining gestation age and/or MVA).
» Any signs of sepsis (tachycardia, hypotension, pyrexia, tachypnoea, offensive vaginal discharge).
» If gestation ≥9 weeks and 1 day and MVA not available or declined, refer.

6.4 ANTENATAL CARE

6.4.1 ANTENATAL SUPPLEMENTS

Z36.9 + (Z29.9)

DESCRIPTION

Supplements before and during pregnancy and lactation can help to prevent, or lessen the effect of, a number of conditions or complications associated with pregnancy. Specifically:

» Folic acid, given for at least one month before conception and during pregnancy (particularly the first 12 weeks) can help to prevent neural tube defects (abnormal development of spinal cord/brain).
» Iron can help to prevent anaemia.
» Calcium can help to prevent pre-eclampsia.
» Low dose aspirin can reduce the risk for early onset pre-eclampsia in women at risk.

GENERAL MEASURES

» Eat a balanced diet to prevent nutritional deficiency.
» Avoid unpasteurised milk, soft cheeses, raw or undercooked meat or poultry, raw eggs, and shellfish.
» Cut down on caffeine. Reduce intake of tea. Do not drink tea within 2 hours of taking iron tablets.

MEDICINE TREATMENT

Prevention of Neural Tube Defects (NTD)

- Folic acid, oral, 5 mg daily:
  - All women intending to become pregnant or pregnant women (first trimester of pregnancy).
  - If high risk, throughout pregnancy, i.e.:
    - on anticonvulsants - especially valproic acid and carbamazepine,
  - previous child with NTD, or
    - family history of NTD.

LoE:Ia[14]

CAUTION

Children born to women taking valproic acid are at significant risk of birth defects (10%) and persistent developmental disorders (40%).

Valproic acid is contra-indicated and should be avoided in pregnancy and women of child-bearing potential.

LoE:IIb[15]

Prevention of anaemia:

During pregnancy, after delivery and during lactation:

- Ferrous sulfate compound BPC (dried), oral, 170 mg (± 55 mg elemental iron) 12 hourly with meals.

OR

- Ferrous fumarate, oral, 200 mg once daily (± 65 mg elemental iron).
  - Taking iron tablets with meals decreases iron absorption, but improves tolerability. (Note: Do not take iron tablets with milk).

<u>If daily iron is poorly tolerated (e.g. epigastric pain, nausea, vomiting and constipation), intermittent iron supplementation may be administered:</u>

- Ferrous sulfate compound BPC (dried), oral, 340 mg per week, (± 110 mg elemental iron), with meals.

OR

- Ferrous fumarate, oral, 400 mg per week (± 130 mg elemental iron).

Note: Established anaemia i.e. Hb <10 g/dL, see Sections 3.1: Anaemia and 6.4.3: Anaemia in pregnancy. *LoE:IVb*[16]

<u>Prevention of pre-eclampsia:</u>

From confirmation of pregnancy (all women):

- Calcium, elemental, oral, 1 g daily.
  - Although the benefit is greatest in high-risk women, consider use of this agent in all pregnant women.
  - Calcium reduces iron absorption from the gastro-intestinal tract. Take supplements 4 hours apart from each other. *LoE:IIIb*[17]

  From confirmation of pregnancy (all women with risk factors. including: pre-eclampsia in a previous pregnancy, chronic hypertension, diabetes, antiphospholipid syndrome, or systemic lupus erythematosus (SLE)):
  - Aspirin, oral, 150 mg, taken at bedtime, preferably not on an empty stomach, until 36 weeks.
    - Start at 6 weeks of gestation but preferably before 16 weeks.
    - Stop at 36 weeks to reduce risk of bleeding during labour.
    - Administration at bedtime reduces the risk of gastric irritation.

LoE:IVb[18]

» Refer to the next level of care as appropriate for the condition (see below). Women with a prior history of pre-eclampsia, but otherwise well, can be referred for the next available appointment, preferably around 20 weeks.

6.4.2 HYPERTENSIVE DISORDERS IN PREGNANCY

DESCRIPTION

Hypertension in pregnancy, pre-eclampsia and eclampsia may have very serious and fatal consequences for both the mother and the baby.

Hypertension is defined by:

» A systolic BP ≥140 and/or a diastolic BP ≥90 mmHg measured on 2 occasions, 4 hours apart.

OR

» A systolic BP ≥160 and/or a diastolic BP ≥110 mmHg measured on a single occasion.

(Always measure BP in the left lateral or sitting position (and not supine position).

Hypertensive disorders of pregnancy can be classified as:

» **Chronic hypertension:**
  - Hypertension diagnosed before pregnancy or <20 weeks of pregnancy.
» **Gestational hypertension:**
  - Hypertension without proteinuria, with onset ≥20 weeks of pregnancy.
» **Pre-eclampsia:**
» Hypertension with proteinuria, with onset ≥20 weeks of pregnancy (high risk patients include: nulliparity, obesity, multiple pregnancy, chronic hypertension, kidney disease, diabetes, pre-eclampsia in a previous pregnancy, advanced maternal age or adolescent pregnancy).
» **Eclampsia:**
» Generalised tonic-clonic seizures in women with pre-eclampsia.
» **Chronic kidney disease:**
  - Proteinuria with/without hypertension, diagnosed at <20 weeks of pregnancy.

Categorising hypertensive disease:

» A diastolic BP of 90 to 109 mmHg and/or systolic BP of 140 to 159 mmHg; but with **NO** symptoms or organ dysfunction is classified as hypertensive disease without severe features.
» Maternal features of severe hypertensive disease are any or more of the following:
  - Acute severe hypertension (diastolic BP of 110 mmHg and/or systolic >160 mmHg).
» Thrombocytopenia (platelet count <100 000/µL).
  - Impaired liver function (ALT or AST >40 IU/L).
  - Severe persistent right upper quadrant or epigastric pain.
» HELLP syndrome (platelets <100 000 and AST >70 µl and LDH >600 µl).
» Serum creatinine ≥120 micromol/L.
  - Pulmonary oedema.
  - New-onset severe headache unresponsive to medication.
  - Visual disturbances.

REFERRAL

Urgent

» Hypertension with severe features (refer to high risk labour ward urgently).
» Pre-eclampsia with or without severe features (refer to high risk labour ward, urgently if severe features present).

Non-urgent

» Chronic hypertension.
» Chronic kidney disease.

6.4.2.1 CHRONIC HYPERTENSION

O10.0

Stop oral antihypertensive medicines when pregnancy is planned or as soon as pregnancy is diagnosed, change to methyldopa and refer for assessment and management.

MEDICINE TREATMENT

- Methyldopa, oral, 250 mg 8 hourly.
  - Titrate to a maximum dose: 750 mg 8 hourly.
  - When using iron together with methyldopa, ensure that iron and methyldopa are not taken concurrently.

LoE:IIIb[19]

REFERRAL

Urgent (within 2 days)
All cases.

6.4.2.2 GESTATIONAL HYPERTENSION: NO SEVERE FEATURES

O13

DESCRIPTION

Hypertension occurring for the first time at ≥ 20 weeks' gestation with no proteinuria.

GENERAL MEASURES

» May be managed without admission <38 weeks' gestation, provided no proteinuria.
» Review the following on a weekly basis:
  - BP
  - weight
  - urine analysis
  - height of fundus (every two weeks)
  » fetal heart rate and movements
» Educate on signs requiring urgent follow-up (headache, epigastric pain, visual disturbances, vaginal bleeding etc.).

MEDICINE TREATMENT

- Methyldopa, oral, 250 mg 8 hourly.
  - Titrate to a maximum dose: 750 mg 8 hourly.
  - When using iron together with methyldopa, ensure that iron and methyldopa are not taken concurrently.

LoE:IIIb[20]

REFERRAL

» All patients with gestational hypertension at 38 weeks for delivery.
» Pre-eclampsia (all levels of severity).
» Poor control of hypertension.
» Hypertension with severe features (urgent referral).

6.4.2.3 GESTATIONAL HYPERTENSION: WITH SEVERE FEATURES

O13

Management is the same as for treatment of pre-eclampsia with severe features – See Section 6.4.2.4: Pre-eclampsia.

6.4.2.4 PRE-ECLAMPSIA

O11/O14.0-2/O14.9

DESCRIPTION

» A systolic BP ≥140 and/or diastolic BP ≥90 mmHg with proteinuria, after 20 weeks of pregnancy (significant proteinuria defined as ≥1+ proteinuria).
» Pre-eclampsia with severe features is a life-threatenig condition and needs urgent stabilsation and referral.
» The following indicate a higher risk of developing pre-eclampsia: nulliparity, obesity, multiple pregnancy, chronic hypertension, kidney disease, diabetes, pre-eclampsia in a previous pregnancy, advanced maternal age or adolescent pregnancy.

GENERAL MEASURES

» Advise all pregnant patients to urgently visit the clinic if severe persistent headache, visual disturbances, epigastric pain (not discomfort).
» If severe features are present:
» Insert a Foley's catheter and monitor urine output hourly.
- Monitor BP every 30 minutes.
- Check reflexes every hour.

MEDICINE TREATMENT

Prevention of pre-eclampsia

See Section 6.4.1: Antenatal Supplements.

Treatment if severe features are present

- Magnesium sulfate, IV, 4 g as a loading dose diluted with 200 mL sodium chloride 0.9% and infused over 20 minutes. *LoE:Ia*[21]

FOLLOWED BY

- Magnesium sulfate, IM, 10 g given as 5 g in each buttock.
  - Then IM, 5 g every 4 hours in alternate buttocks.

CAUTION: USE OF MAGNESIUM SULFATE

Stop magnesium sulfate if knee reflexes become absent or if urine output <100 mL/4 hours or respiratory rate <16 breaths/minute.

If respiratory depression occurs:

- Calcium gluconate 10%, IV, 10 mL given slowly at a rate not >5 mL/minute.

AND

If systolic BP ≥ 160 and/or a diastolic BP ≥110 mmHg:

- Nifedipine, oral, 10 mg (not sublingual) as a single dose.
  - May be repeated after 30 minutes if diastolic BP remains ≥110 mmHg or if systolic BP remains ≥160 mmHg.

LoE:Ia[22]

REFERRAL

Urgent

» Pre-eclampsia with severe features.

Non urgent

» Pre-eclampsia without severe features (within 24 hours).

6.4.2.5 ECLAMPSIA

O15.0-2/O15.9

GENERAL MEASURES

» Stabilise prior to urgent referral.
» Ensure safe airway.
» Place patient in left lateral position.
» Insert a Foley's catheter and monitor urine output hourly.
» Monitor BP and check reflexes every 30 minutes.

MEDICINE TREATMENT

- Administer oxygen.
- Magnesium sulfate, IV, 4 g as a loading dose diluted with 200 mL sodium chloride 0.9% and infused over 20 minutes.

AND

- Magnesium sulfate, IM, 10 g given as 5 g in each buttock
  - Then IM, 5 g every 4 hours in alternate buttocks.

CAUTION: USE OF MAGNESIUM SULFATE

Stop magnesium sulfate if knee reflexes become absent or if urine output <100 mL/4 hours or respiratory rate <16 breaths/minute.

If respiratory depression occurs:

- Calcium gluconate 10%, IV, 10 mL given slowly at a rate not >5 mL/minute.

LoE:IVb[23]

If recurrent eclamptic seizures despite magnesium sulfate loading dose administration:

- Magnesium sulfate, IV, 2 g, diluted with 100 mL sodium chloride 0.9%, over 10 minutes.

LoE:IVb[24]

If seizures still persist and are continuous, there may be another cause of the seizures: treat as for status epilepticus (see Section 21.2.11: Seizures and status epilepticus).

AND

If systolic BP ≥160 and/or a diastolic BP ≥110 mmHg and patient becomes alert:

- Nifedipine, oral, 10 mg (not sublingual) as a single dose.
  - May be repeated after 30 minutes if diastolic BP remains ≥ 110 mmHg or if systolic BP remains ≥160 mmHg.

LoE:Ia[25]

REFERRAL

Urgent

All cases.

6.4.3 ANAEMIA IN PREGNANCY

O99.0 + (D64.9)

DESCRIPTION

Anaemia in pregnancy is a Hb <11 g/dL, most commonly due to iron deficiency. Hb levels should be checked at the booking visit, between 28 and 32 weeks, and at ± 36 weeks.
Treatment is recommended when the Hb falls below 10 g/dL.
Women with iron deficiency often have 'pica', e.g. eating substances such as soil, charcoal, ice, etc.

GENERAL MEASURES

» A balanced diet to prevent nutritional deficiency.
» Reduce intake of tea.
» Do not drink tea within 2 hours of taking iron tablets.

MEDICINE TREATMENT

Established anaemia with Hb <10 g/dL:

Continue for 3 months after the Hb normalises in order to replenish body iron stores. Hb is expected to rise by at least 1.5 g/dL in two weeks.

- Ferrous sulfate compound BPC (dried), oral, 170 mg (± 55 mg elemental iron) 12 hourly with meals.
  - Taking iron tablets with meals decreases iron absorption, but improves tolerability (Note: Do not take iron tablets with milk).

OR

- Ferrous fumarate, oral, 200 mg (± 65 mg elemental iron) 12 hourly.
  - Taking iron tablets with meals decreases iron absorption, but improves tolerability. (Note: Do not take iron tablets with milk).

LoE:IIb[26]

REFERRAL

Urgent (same day)

» Hb <6 g/dL.
» Hb = 6-7.9 g/dL with symptoms (dizziness, tachycardia, shortness of breath at rest).

Non-urgent (within 1 week)

» Hb = 6-7.9 g/dL without symptoms (to high-risk clinic if available).
» Hb = 8-9.9 g/dL and no improvement after one month of treatment (to high-risk clinic, if available).
» Hb <10 g/dL at 36 weeks' gestation or more: transfer to hospital for further antenatal care and delivery.

6.4.4 SYPHILIS IN PREGNANCY

O98.1

DESCRIPTION

A sexually transmitted infection with many manifestations that has a latent phase and may be asymptomatic in pregnant women. It is caused by the spirochaete, T pallidum. Vertical

transmission to the fetus occurs in up to 80% of cases in untreated mothers. Untreated maternal syphilis may lead to miscarriage, stillbirth, non-immune hydrops fetalis, or congenital syphilis in the newborn.

DIAGNOSIS

» All pregnant women should have a syphilis test at the first booking visit.
» Women who booked in the first trimester and tested negative should have a repeat test done around 32 weeks' gestation.
» Diagnosis is made by positive serology. Clinical signs and symptoms are most recognisable in secondary syphilis. These include rash on palms of the hand and/or soles of the feet; and condylomata lata on genital areas.
» There are 2 types of diagnostic tests:

Specific treponemal test (e.g. TPAb//TPHA/FTA-ABS):	**Non-treponemal test** (e.g. RPR):
» Specifically diagnoses syphilis. » Available as rapid on-site finger-prick syphilis tests or laboratory-based assays. » Dual HIV/syphilis rapid on-site test may be used when HIV status is negative/unknown. » Once positive, a specific treponemal test generally remains positive for life, and therefore the presence of specific treponemal antibodies cannot differentiate between current and past infections. » A person with previously successfully treated syphilis will retain lifelong positive specific treponemal test results. » Thus a positive test should be immediately followed by an RPR test to confirm active disease; however treatment can be started while awaiting the RPR result.	The RPR can be used: » To determine if the patient's syphilis disease is active or not, » To measure a successful response to therapy (at least a fourfold reduction in titre, e.g. 1:256 improving to 1:64), or » To determine a new re-infection. **Note:** » False RPR positive reactions may occur, notably in patients with connective tissue disorders (these are usually low titre <1:8). For this reason, positive RPR results should be confirmed as due to syphilis by further testing of the serum with a specific treponemal test; if the specific test result cannot be obtained the same day, start treatment while awaiting the result. » If specific treponemal test e.g. TPAb is performed first and gives a positive result, serum can be further tested for RPR to determine the presence of active syphilis (reverse testing algorithm). » Some patients, even with successful treatment for syphilis, may retain life-long positive RPR results at low titres (≤1:8), which does not change by more than one dilution difference over time (so-called serofast patients).

GENERAL MEASURES

» Encourage partner notification and treatment after confirmon the diagnosis.
» Provide counselling and promote HIV testing.
» Educate on treatment adherence.
» Promote condom use.

MEDICINE TREATMENT

Pregnant woman

- Benzathine benzylpenicillin, IM, 2.4 MU weekly for 3 weeks.
  - Reconstitute with 6 mL of lidocaine 1% without adrenaline (epinephrine).

- Follow up at 3 months after the last injection to confirm a fourfold (i.e. 2 dilution) reduction in RPR titres, provided the initial titre was ≥1:8. If initial titre <1:8, further reductions may not occur (serofast reaction).

LoE:IVb[27]

Severe penicillin allergy:

Z88.0

Refer for in-patient penicillin desensitisation.

Newborn baby

If baby asymptomatic, well and mother not fully treated >1 month before delivery, give:

- Benzathine benzylpenicillin (depot formulation), IM, 50 000 units/kg as a single dose into the lateral thigh.

CAUTION

Benzathine benzylpenicillin (depot formulation) must never be given intravenously.

REFERRAL (BABY)

» Mother was not treated.
» Mother has received <3 doses of benzathine benzylpenicillin.
» Mother delivered within 4 weeks of commencing treatment.
» Baby has any of the following:
  - Hepatosplenomegaly
  - Snuffles
  - Jaundice
  - Purpura
» Pseudoparesis
  - Oedema
  - Anaemia
  - Desquamative rash (especially involving palms and soles)

6.4.5 URINARY TRACT INFECTION, IN PREGNANCY

6.4.5.1 CYSTITIS

O23.1

DESCRIPTION

This condition usually presents with lower abdominal pain, frequency of micturition and/or dysuria. There are no features of sepsis, e.g. fever.
Urine dipstick testing usually shows nitrites and/or leukocytes; protein and/or blood may also be detected.

GENERAL MEASURES

» Encourage oral fluid intake.
» Midstream urine for microscopy, culture and sensitivity (start empiric treatment while awaiting results).

MEDICINE TREATMENT

See Section 8.4: Urinary tract infection.

REFERRAL

» No response to treatment, or resistant organism on culture.

» Features of pyelonephritis (see Section 6.4.5.2: Pyelonephritis)

6.4.5.2 PYELONEPHRITIS

O23.0

DESCRIPTION

Features of pyelonephritis include: temperature ≥38°C, renal angle tenderness, vomiting, tachypnoea, tachycardia, hypotension, confusion.
This condition is more serious and may result in preterm labour.

GENERAL MEASURES

» Collect midstream urine for microscopy and culture and sensitivity.
» Ensure adequate hydration with IV fluids while awaiting transfer.

MEDICINE TREATMENT

Empiric therapy:

- Ceftriaxone, IV, 1 g as a single dose. W

CAUTION: USE OF CEFTRIAXONE

Do not administer calcium-containing fluids, e.g. Ringer's Lactate, concurrently with ceftriaxone. *LoE:IVb*

REFERRAL

All cases.

6.4.6 LISTERIOSIS

A32.0-1/A32.7-9

Note: If you have any questions or concerns, visit www.nicd.ac.za or call the NCID hotline on 082 883 9920.

DESCRIPTION

Listeriosis is a preventable and treatable bacterial disease spread through food. Most listerial infections are sporadic but outbreaks do occur. Pregnancy is a predisposing factor for developing serious Listeriosis.
Patients present with a flu-like illness (with fever). They may also have sore joints, backache, diarrhoea and vomiting, and/or signs of meningitis (headache, neck stiffness, confusion).
Listeriosis has been added to the national list of notifiable diseases.

GENERAL MEASURES

Educate your patients on how to prevent it: wash hands, knives, and cutting boards after handling uncooked food, avoid luncheon meats/delicatessen meats, wash raw vegetables thoroughly, avoid unpasteurised milk, thoroughly cook raw food from animal sources.

MEDICINE TREATMENT

LoE:Ia[31]

During outbreaks, if signs of meningitis are present, give pre-referral treatment (see Section 15.8.1: Acute Meningitis).

LoE:IVb[28]

REFERRAL

All cases.

6.4.7 PRETERM LABOUR (PTL) AND PRETERM PRELABOUR RUPTURE OF MEMBRANES (PPROM)

6.4.7.1 PRETERM LABOUR (PTL)

O60.0

DESCRIPTION

Regular painful contractions: 3 per 10 minutes, occurring <37 weeks of gestation.

Note: Women with a previous spontaneous preterm delivery are at higher risk for preterm delivery in the next pregnancy. Refer the following high-risk cases for cervical screening:

» A history of 2nd trimester miscarriage (between 16 and 26 weeks).
» Previous history of spontaneous preterm birth between 27 and 34 weeks.
» No need to refer previous late preterm deliveries (34 to 37 weeks).

LoE:IVb[29]

GENERAL MEASURES

<26 weeks:
» Refer without tocolysis (medicines to inhibit uterine contractions).

LoE:IVb[30]

26–34 weeks of gestation:
» Refer with initial tocolysis and corticosteroids.

>34 weeks of gestation:
» Allow labour to continue at midwife obstetric unit.

MEDICINE TREATMENT

<u>To improve fetal lung maturity at 26–34 weeks:</u>

Z29.2

- Betamethasone, IM, 12 mg, 2 doses 24 hours apart.

If betamethasone is not available:

- Dexamethasone, IM, 8 mg, 3 doses 8 hours apart.

LoE:Ia[32]

Note: Corticosteroids are maximally effective about 24 hours after administration of the first dose. Therefore, give as soon as possible following diagnosis of PTL or PPROM.

LoE:Ia[33]

Tocolysis:
Z29.2
Preload with:
- Sodium chloride 0.9%, IV, 200 mL.

THEN
- Nifedipine, oral, 20 mg as a single dose.
  - Follow with 10 mg after 30 minutes, if contractions persist.
  - Then 10 mg every 4 hours until patient is transferred.
  - Maximum duration: 24 hours.

REFERRAL
All cases before 34 weeks.

6.4.7.2 PRETERM PRELABOUR RUPTURE OF MEMBRANES (PPROM)
O42.0-1/O42.9

DESCRIPTION
Rupture of the membranes before 37 weeks' gestation.
Confirmed with a sterile speculum examination demonstrating leakage of amniotic fluid.
If there is clinical uncertainty test for pH – liquor is alkaline.
Avoid digital vaginal examination.

MEDICINE TREATMENT
To improve fetal lung maturity at 26 to 34 weeks: (Z29.2)
- Betamethasone, IM, 12 mg, 2 doses 24 hours apart. *LoE:Ia*[34]

If betamethasone is not available:
- Dexamethasone, IM, 8 mg, 3 doses 8 hours apart. *LoE:Ia*[35]

Note: Corticosteroids are maximally effective about 24 hours after administration of the first dose. Therefore, give as soon as possible following diagnosis of PTL or PPROM.

Initiate antibiotic therapy:(Z29.2)
- Ampicillin, IV, 1 g 6 hourly for 48 hours. A

Follow with:
- Amoxicillin, oral, 500 mg 8 hourly for a further 5 days. A

AND
- Azithromycin 1 g orally as a single dose. W *LoE:IIa*[36]

Severe penicillin allergy:(Z88.0)
- Azithromycin 1 g orally as a single dose and refer urgently. W

REFERRAL
All cases, but refer **urgently** if PPROM <34 weeks or cases of severe penicillin allergy.

6.4.7.3 PRELABOUR RUPTURE OF MEMBRANES AT TERM (PROM)

O42.0-1/O42.9

DESCRIPTION

Rupture of membranes before the onset of labour at term (>37 weeks).
A sterile speculum examination is required to visually confirm amniotic fluid draining through the cervical os.

GENERAL MEASURES

» If PROM is followed by uterine contractions at >34 weeks' gestation, allow labour to proceed.
» If the woman does not develop uterine contractions within 12 hours of PROM, commence antibiotics and transfer for induction of labour.

MEDICINE TREATMENT

Prolonged pre-labour rupture of membranes >12 hours/ suspected chorio-amnionitis:

Initiate antibiotic therapy and refer urgently:

O41.1

- Ampicillin, IV, 1 g as a single dose. A

AND

- Metronidazole, oral, 400 mg as a single dose and refer. A

Severe penicillin allergy:

Z88.0

- Azithromycin, oral, 500 mg as a single dose. W

AND

LoE:IIa[37]

- Metronidazole, oral, 400 mg as a single dose and refer. A

REFERRAL

Urgent

» Suspected chorio-amnionitis (refer after starting antibiotics).
» Prolonged pre-labour rupture of membranes (>12 hours).
» Meconium stained liquor.

6.5 INTRAPARTUM CARE

O80.0-1/O80.8-9

For the comprehensive management of women in labour refer to the most recent National Maternity Care and Intrapartum Care Guidelines.

DESCRIPTION

Labour is divided into 4 stages:

» First stage:
  - onset of regular painful uterine contractions at term to full dilatation of cervix.

» Second stage:
  - full dilatation to delivery of the baby.
» Third stage:
  - delivery of the baby to delivery of the placenta.
» Fourth stage:
  - 1 hour post-delivery of the placenta.

GENERAL MEASURES

» Encourage companion support.
» Ensure that the mother is adequately hydrated (can be done orally).
» Monitor progress of labour on partogram.

MEDICINE TREATMENT

First stage with cervical dilatation <10 cm:

Analgesia:

O62.9 + (Z51.2)

- Morphine, IM, 0.1 mg/kg to a maximum of 10 mg, 4 hourly.

LoE:IVb[38]

OR

Especially in advanced first stage of labour:

- Nitrous oxide 50% mixed with oxygen 50%, given by mask.

AND

For nausea and sedation, if needed:

- Promethazine, IM, 25 mg 4 hourly.

Second stage

If episiotomy is needed, local anaesthetic:

O62.9 +(R10.2+Z51.2)

- Lidocaine1%.
  - Do not exceed 20 mL.

Fetal distress during labour

O68.0-3/O68.8-9/O75.9

Place the woman in the left lateral position.

Tocolysis, then refer:

- Salbutamol, IV, 0.5 mg/mL, 250 mcg administered slowly over 2 minutes.
  - Reconstitute as follows:
  - Salbutamol 1 mL (0.5 mg/mL) added to 9 mL of water for injection, to make a 50 mcg/mL solution. Monitor pulse.
  - Inject 5 mL (250 mcg) over at least 2 minutes. Monitor pulse.
  - If pulse increases >120 beats/minute, discontinue the injection.
  - Do not administer if mother has cardiac disease.

Third stage

Prevention of post-partum haemorrhage (PPH):

Z29.2

» Check for twins.

- Oxytocin, IM, 10 units.

» Clamp and cut cord after 1 minute.
» Controlled cord traction of the placenta.

If >500 mL blood loss, manage as postpartum haemorrhage (see Section 6.7.1: Postpartum haemorrhage (PPH)).

Rh-negative mother

O36.0

» Check baby's Rh status; do not given anti-D if the baby is Rh-negative, or if the mother has Anti-Rh antibodies.

Administer to Rh-negative mother, if baby is Rh-positive or baby's Rh group is unknown:

- Anti-D immunoglobulin, IM, 100 mcg, preferably within 72 hours but can be given up to 7 days after delivery.

Care of the newborn baby

If baby not crying/breathing well, see Section 6.6.2: Neonatal Resuscitation.
For routine care of the neonate, see Section 6.6.1: Routine care of the neonate.
Observe mother and neonate for 1–2 hours before transfer to the postnatal ward.

For pain after delivery

- Paracetamol, oral, 500 mg to 1 g, 4 to 6 hourly as required (to a maximum of 4 g in 24 hours).
  - Maximum dose: 15 mg/kg/dose.

If needed

- Ibuprofen, oral, 400 mg 8 hourly with or after a meal as needed for up to 5 days. *LoE:IVb*

REFERRAL

» Prolonged labour according to charting on partogram.
» Fetal distress during labour
» Post-partum haemorrhage.
» Retained placenta.
» Other complications of mother or baby.

6.6 CARE OF THE NEONATE

6.6.1 ROUTINE CARE OF THE NEONATE

Z76.2

For the comprehensive management of the newborn refer to the most recent Newborn Care Charts.

GENERAL MEASURES

Routine care for baby after delivery

» Dry the baby thoroughly at birth.
» If there is meconium, clear the airway first.
» **If baby is not crying**
  - Clear airway, stimulate.

- If baby not breathing well, clamp and cut the cord and start resuscitation (see Section 6.6.2: Neonatal Resuscitation).

» **If the baby is crying and breathing well**
- Place on mother's chest, keep warm and check breathing.
- Clamp and cut cord after 1 minute.
- Monitor with mother and initiate breastfeeding.

Check and record the Apgar score:

Apgar score	0	1	2
Heart rate	Absent	<100/min	>100/min
Respiration	Absent	Slow or irregular	Good, crying
Muscle tone	Limp	Slight flexion	Active, moves
Response to stimulation	No response	Grimace	Vigorous cry
Colour	Blue or pale	Body pink, limbs blue	Pink all over

Check baby from head to toe including baby's back
» Check weight and head circumference.
» If any of the following, provide immediate management (see Section 6.6.3: Care of sick and small neonates) and refer to a neonatal unit:
- Grunting or chest indrawing
- Central cyanosis
- Fast breathing
- Abnormal tone (floppy/stiff)
- Less than normal movements
- Major congenital abnormality
- Head circumference >39 cm
- Birth weight <2.0 kg

Identify the infant at risk or needing special treatment
» Birth weight <2.5 kg.
» Suspected chorio-amnionitis (membranes ruptured for >18 hours, offensive liquor at birth).
» Neurological or congenital problem.
» Hospital stay >3 days after delivery.
» Mother blood group O and/or Rh –ve.
» Possible social problem (mother has died or is ill, teenage caregiver, social deprivation).
» Mother diabetic.
» Mother syphilis positive (partially treated or untreated or treated <1 month before delivery).
» Mother HIV-infected.
» Infant not breastfed.
» Mother on TB treatment.

Initiate bonding and feeding
» Place the baby skin-to-skin with mother and initiate breastfeeding immediately.

Identify and record
» Formally identify the baby with the mother.
» Place a label with the mother's name and folder number, baby's sex, and time and date of birth on the baby's wrist and ankle.
» After giving vitamin K and chloramphenicol eye ointment, give the baby back to the mother, unless there is a reason for the baby to be transferred to a neonatal unit.

MEDICINE TREATMENT

Bleeding prophylaxis
Z29.2

- Vitamin K, IM, 1 mg immediately after birth routinely.
  - Administer in the antero lateral aspect of the mid-thigh.

Neonatal conjunctivitis prophylaxis

Z29.2

- Chloramphenicol ophthalmic ointment 1%, applied routinely to each eye after birth.

Routine EPI immunisation:

- BCG vaccination, intradermal, once neonate is stable. (Z23.2)
- bOPV (polio vaccine), oral, once neonate is stable. (Z24.0)

No baby must be sent home without immunisation.

REFERRAL

Refer to a neonatal unit if:

» Baby needed resuscitation.
» Apgar score <8 at 5 minutes.

6.6.2 NEONATAL RESUSCITATION

P29.8

Be prepared Be at the delivery Check the equipment and emergency medicines

» Follow the algorithm at the end of this section.
» Check that each step has been effectively applied before proceeding to the next step. The algorithm follows the assumption that the previous step was unsuccessful and the baby is deteriorating.
» Use oxygen concentration that alleviates central cyanosis, obtains target pulse oximetry readings (if pulse oximeter is available), and restores a heart rate >100 beats/minute. Bag and mask ventilation should be initially done with room air. (There is evidence that routine resuscitation with 100% oxygen is potentially harmful to the baby.)

An unsatisfctory response to resuscitation includes:

» A sustained slow heart rate, usually ≤60 beats/minute or a progressive decrease in heart rate until cardiac arrest occurs.
» Episodes of cardiac arrest, with a progressively weaker response to chest compressions, positive pressure ventilation and medicines.
» A decreasing blood pressure, increasing acidosis, severe hypotonia with central cyanosis or intense pallor.
» Apnoea or weak, irregular and inefficient respiratory efforts.

MEDICINE TREATMENT

If baby's response to resuscitation is inadequate once ventilation and circulation are adequately supported the following steps should be carried out:

If the mother is known or suspected to have had narcotic pain relief and the baby has normal heart rate and colour response to bag-mask ventilation, but has not initiated sustained regular respiratory effort:

- Naloxone, IV, 0.1 mg/kg.

> Naloxone is not routinely indicated for neonatal resuscitation.

Check the blood glucose of the baby.If hypoglycaemia is present:

E16.0-2/P70.4

- Dextrose 10%, IV, 2.5 to 5 mL/kg.

Medicines used during neonatal resuscitation

Medicine and dose	Indications	Effect
• Adrenaline (epinephrine) o 0.1 mL/kg of a 1:10 000 dilution IV, (0.01 mg/kg/dose). o ET, up to 1 mL/kg of a 1:10 000 dilution (0.1 mg/kg/dose).	» Asystole. » Heart rate <60 beats/minute.	» ↑Heart rate. » ↑Myocardial contractility. » ↑Arterial pressure.
• Naloxone, IV/IM, 0.1 mg/kg. o May need repeating after 2 hours.	» Maternal administration of opiates with apnoeic infant.	» Corrects apnoea and/or hypoventilation.
• Dextrose,10% IV. o 2.5–5 mL/kg of 10% dextrose (250–500 mg/kg). o 10% solution: draw up 4 mL of 50% dextrose into a 20 mL syringe then draw up 16 mL water for injection – mix by agitating the syringe.	» Hypoglycaemia (usually only occurs after acute resuscitation).	» Corrects hypoglycaemia.
Fluid for volume expansion: • Sodium chloride 0.9%, IV, 10–20 mL/kg, slow IV (5–10 minutes).	» Hypovolaemia (usually history of blood loss, child pale shocked with poor pulses and perfusion).	» ↑Blood Pressure and improve tissue perfusion.

If no adequate response has occurred by this stage, a person skilled in neonatal resuscitation should be consulted and the baby transferred with ongoing resuscitation to a higher level of care:

» Discontinue resuscitation if the unsatisfactory response to resuscitation persists for >20 minutes and underlying conditions e.g. pneumothorax, diaphragmatic hernia has been excluded or >10 minutes of unresponsive cardiac arrest (asystole) and/or >20 minutes of unsustained respiration.

» Babies requiring minimal resuscitation with prompt and complete response may be watched with their mothers.

» Babies with a favourable response to resuscitation should be referred to a neonatal high or intensive care unit, if available, for post resuscitation care.

» Babies, who, after resuscitation, are not completely normal, should be referred to a higher level for care using transport with necessary support, e.g. oxygen, temperature control.

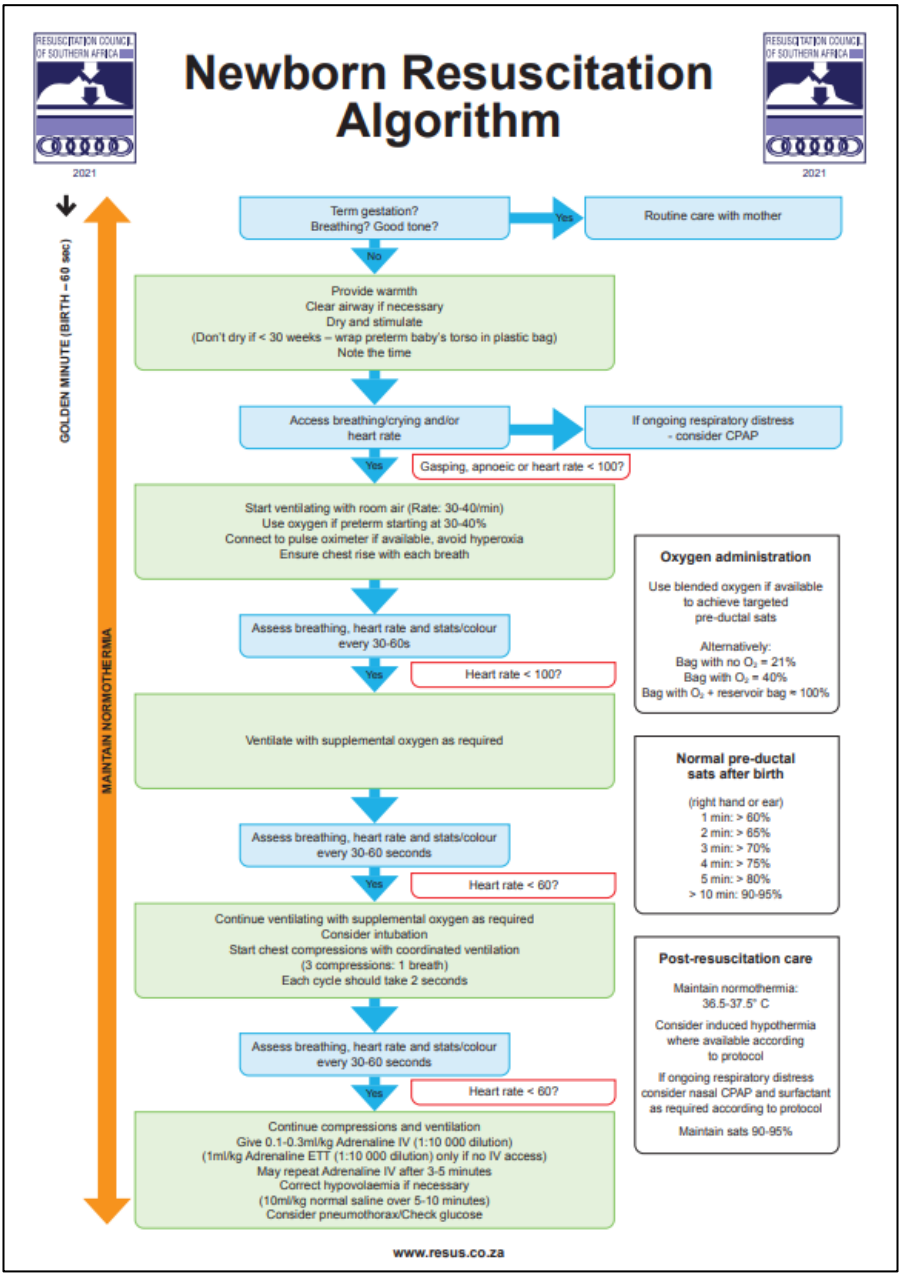

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Figure 6.1: Newborn resuscitation algorithm

6.6.3 CARE OF SICK AND SMALL NEONATES

DESCRIPTION

Neonates can become ill very rapidly and signs of disease are often not readily appreciated unless specifically looked for. Neonates should be referred urgently.
Neonates <2.5 kg are at higher risk of feeding and growth problems and need careful follow-up.

Urgently manage and refer neonates with any of the following signs of possible serious bacterial infection and/or jaundice:

- » Convulsions
- » Lethargic/ unconscious
- » Bulging fontanelle
- » Apnoea (<30 breaths/min)
- » Severe chest indrawing
- » Nasal flaring or grunting
- » Swollen eyes; pus draining from eye
- » Low or high temperature
- » Not able to feed
- » Passing blood per rectum
- » Pallor
- » Jaundice in 1st 24 hours of life
- » Diarrhoea
- » Many or severe skin pustules
- » Fast breathing (>60 breaths/min)
- » Vomiting everything/bile-stained vomitus
- » Only moves when stimulated
- » Umbilical redness extending to the skin and draining pus

GENERAL MEASURES

- » Keep the neonate warm (skin-to-skin/kangaroo mother care or in an incubator), the axillary temperature should be 36.5–37°C.
- » Check blood glucose concentration and treat if low (<2.6 mmol/L). Check blood glucose concentration again after 15 minutes. If normal, feed 2 to 3 hourly. If still low, treat as severe hypoglycaemia (see below).
- » Check mother able to successfully establish breastfeeding in the small neonate and check health and weight gain more frequently.

MEDICINE TREATMENT

If grunting or severe chest indrawing

P22.0-1/P22.8-9

- Oxygen, using nasal catheter at 1 L/minute.

If infection is suspected and jaundice has been excluded

Z29.2

- Ceftriaxone, IM, 80 mg/kg/dose immediately as a **single dose**. W
  - Administer into the lateral thigh.
  - Do not inject more than 1 g at one injection site.

CAUTION: USE OF CEFTRIAXONE IN NEONATES AND CHILDREN

- » If SUSPECTING SERIOUS BACTERIAL INFECTION in neonate, give ceftriaxone, even if jaundiced.
- » Avoid giving calcium-containing IV fluids (e.g. Ringer's Lactate) together with ceftriaxone:
  - If ≤28 days old, avoid calcium-containing IV fluids for 48 hours after ceftriaxone administered.

- If >28 days old, ceftriaxone and calcium-containing IV fluids may be given sequentially provided the giving set is flushed thoroughly with sodium chloride 0.9% before and after.
- Preferably administer IV fluids without calcium contents.

» Always include the dose and route of administration of ceftriaxone in the referral letter.

If blood glucose <2.6 mmol/L and baby able to suckle or take orally:

» Breastfeed or give expressed breastmilk (only if breastfeeding is not possible, give replacement milk feed 10 mL/kg).

» If unable to take orally consider nasogastric tube feeding. Check blood glucose concentration again after 15 minutes. If normal, feed 2 to 3 hourly. If still <2.6 mmol/L, manage as below.

If blood glucose <1.4 mmol/L or remains <2.6 mmol/L after an oral feed:

- Dextrose 10%, IV, 2 mL/kg as a bolus.

AND

- Dextrose 10%, IV, 3 mL/kg/hour. *LoE:IVb*[39]
  - Repeat in 15 minutes.
  - If blood glucose still low, repeat dextrose bolus.

REFERRAL

Urgent

» All neonates with a possible serious bacterial infection.

» All neonates with jaundice on the first day of life, with pallor or with poor feeding.

» All other neonates with increasing, deep or persistent (>10 days) jaundice should be referred as soon as possible.

» All small neonates (<2.5 kg) not able to feed.

» Persistent hypoglycaemia despite treatment.

(If possible, always send mother with the neonate as well as any clinical notes).

6.6.4 CARE OF THE HIV-EXPOSED INFANT

See Section 11.5: The HIV-exposed infant.

6.6.5 PERINATAL TRANSMISSION OF HEPATITIS B

P00.2

DESCRIPTION

Babies born to mothers with acute hepatitis B infection at the time of delivery or to mothers who are HBsAg-positive or HBeAg-positive.

MEDICINE TREATMENT

- Hepatitis B immunoglobulin, IM, 0.5 mL within 12 hours of delivery. *LoE:IVb*[40]

AND

- Hepatitis B vaccine, IM, 0.5 mL, first dose within 12 hours of delivery. *LoE:IVb*[41]
  - Continue hepatitis B immunisation according to the recommended immunisation schedule.

» Check the baby's hepatitis B surface antigen (HBsAg) and hepatitis B surface antibody (HBsAb) at 9 months:
  - If HBsAg positive: baby has hepatitis B infection – refer.
» If HBsAg negative and HBsAb negative: repeat vaccination with hepatitis B containing vaccine, with a repeat dose in 1 month. Repeat HBsAb one month after the second dose; if still HBsAb negative then refer.
» If HBsAb positive: baby is immune to hepatitis B. Reassure parents, no further testing required.

Note: Do not check hepatitis B serology before 9 months of age as antibodies from the birth dose of immunoglobulin might still be present. Refer if hepatitis B serology is not available.

6.7 POSTPARTUM CARE

6.7.1 POSTPARTUM HAEMORRHAGE (PPH)

O72.0-3

DESCRIPTION

Primary postpartum haemorrhage (PPH) is blood loss >500 mL that occurs within 24 hours of birth.
Secondary PPH occurs 24 hours to 12 weeks after delivery (late or delayed PPH).
The most common cause of primary PPH is an atonic uterus.

GENERAL MEASURES

» Massage fundus and expel clots from vagina.
» Empty the bladder.
» Two intravenous lines (wide bore if possible).
» Bimanually compress the uterus to stop the bleeding.
» If no response to medicine treatment, insert a condom catheter (an open condom slipped over a large Foley's catheter and secured at its base with string to provide a makeshift balloon catheter) into uterus, inflate with 400 to 500 mL of saline and clamp. Pack vagina with swabs to prevent expulsion and refer urgently.

MEDICINE TREATMENT

Replace fluids:

- Sodium chloride 0.9%, IV, infused as fast as possible in one IV line.

AND

- Oxytocin, IV 20 units in 1 000 mL sodium chloride 0.9% infused at 250 mL/hour in 2nd IV line.

LoE:IIb[42]

AND

Tranexamic acid, IV, 1g in 200 mL sodium chloride 0.9% over 10 minutes, or 1 g by slow IV injection,

which may be initiated by a nurse, but only with prior approval of a medical practitioner.

LoE:IIIb[43]

If no response: LoE:IVb

- Ergometrine, IM, 0.5 mg.

OR

- Oxytocin/ergometrine, IM, 5 units/0.5 mg.
  - Avoid ergometrine in hypertensive women and those with heart disease, unless haemorrhage is life threatening (woman haemodynamically unstable).
  - Repeat after 10 to 15 minutes if no response to 1st dose, while arranging referral.

Only in settings where oxytocin is not available:

- Misoprostol, sublingual/rectal, 600mcg as a single dose. LoE:IIa[44]

REFERRAL

All cases.

6.7.2 PUERPERAL SEPSIS

O85/O86.0-4/O86.8

DESCRIPTION

Clinical features include a temperature ≥38°C (usually ≥2 days after delivery), often accompanied by offensive vaginal discharge (lochia) and/or abdominal pain within the first 10 days postpartum. In post caesarean section (CS) cases, there may additionally be tenderness around the CS wound and offensive discharge from the wound.

GENERAL MEASURES

» Monitor vital parameters, e.g. Hb, pulse, BP, temperature.
» Treat for shock if indicated.

MEDICINE TREATMENT

- Ceftriaxone, IV, 1 g as a single dose. W

CAUTION: USE OF CEFTRIAXONE
Do not administer calcium-containing fluids, e.g. Ringer-Lactate, concurrently with ceftriaxone.

AND

- Metronidazole, oral, 400 mg as a single dose. A

REFERRAL

All cases.

6.7.3 CRACKED NIPPLES DURING BREASTFEEDING

O92.1

DESCRIPTION

The areola and nipple are protected by the secretion of a lubricant from Montgomery's glands. Cracked nipples may lead to infection and mastitis.

Causes of cracked nipples include:

» poor positioning of the baby and incorrect attachment to the breast,
» removing the baby from the breast before suction is broken,
» the four signs of good attachment are:
» chin touching breast (or very close),
  - mouth wide open,
  - lower lip turned outward,
  - more areola visible above than below the mouth.

GENERAL MEASURES

» Apply expressed breast milk to the nipples between feeds and air dry.
» If too painful, express the milk and nurse the baby on the other breast until improvement.
» Keep areola and nipple clean and dry.
» Avoid use of soap, creams and lotions on the nipples.

MEDICINE TREATMENT

- Zinc and castor oil ointment.
  - Apply between feeds.

If oral thrush is present, treat neonate with:

- Nystatin solution, oral. See Section 1.2: Candidiasis, oral (thrush).

REFERRAL

No improvement after 2 days.

6.7.4 MASTITIS

O91.2

DESCRIPTION

Inflammation of the breast tissue surrounding the milk ducts.
Risk factor includes retrograde infection from a fissured nipple and milk stasis.
Commonly isolated pathogens include *S. aureus* and *S. epidermidis*. Presentation includes painful breast(s), fever, erythema and malaise.

GENERAL MEASURES

Compresses.
Regular expressing of breast milk.
Do not stop breastfeeding, unless a breast abscess has developed.
If breast abscess present, refer for incision and drainage.

MEDICINE TREATMENT

- Flucloxacillin, oral, 500 mg 6 hourly for 5 days. A

Severe penicillin allergy:

Z88.0

Macrolide, e.g.:

- Azithromycin, oral, 500 mg daily for 3 days. W

Pain:

- Paracetamol, oral, 500 mg to 1 g, 4 to 6 hourly as required (to a maximum of 4 g in 24 hours).
  - Maximum dose: 15 mg/kg/dose.

REFERRAL

» Breast abscess.
» No improvement after 2 days.

6.8 HIV IN PREGNANCY

6.9 MATERNAL MENTAL HEALTH

In vulnerable women, pregnancy exacerbates the risk of developing a mental illness. Approximately one in three women in South Africa have depression and/or anxiety in the perinatal period. Globally, postpartum psychosis affects 1 to 2 women in every 1000 after childbirth .

Risk factors for maternal mental illness include past history of mental illness, recent major life event, (e.g. bereavement) early childhood adversity/ abuse, domestic violence, a history of trauma, displacement from home of origin, low socio-economic status, food insecurity. Women who learn that they are HIV positive during pregnancy have a particular vulnerability to mental health conditions.

Untreated maternal mental illness is associated with the following:

» unplanned and unwanted pregnancy,
» poor adherence to health advice; poor uptake of antenatal services,
» tobacco, alcohol and other substance use,
» self-harm and suicide,
» relapse of the mental illness during the pregnancy or postpartum,
» gestational hypertension and/or diabetes,
» poor pregnancy outcomes, including preterm labour and low birth weight,
» increased risk of neonatal morbidity and stillbirth in mothers with bipolar and psychotic disorders,
» poor engagement with the infant,
» poor family relationships; paternal mental health conditions,
» behavioural and neurodevelopmental disorders in the offspring.

Suspect maternal mental illness if:

» unreliable antenatal clinic attendance,
» continued smoking and/or other substance use during pregnancy,
» any odd or eccentric speech or behaviour,
» screened positive using the 3-item tool in the Maternity Case Record.

Pre-conception care:

» Identify at-risk women – any current or past symptoms of mental illness, emotional problems, substance use, poor social support, abusive relationships, recent trauma, socio-economic deprivation.

» Initiate management for mental disorders/ substance use/ psychosocial stress as needed.
» Use medicines which are safe in pregnancy, unless benefit outweighs risk and patient consents to use (if valproate use, sign acknowledgement of risk form https://www.sahpra.org.za/wp-content/uploads/2025/05/GLF-CEM-PV-S01_v2-Valproate-Annual-Risk-Acknowledgement-Form-ARF.pdf.
» Discuss planning for pregnancy and initiate contraception according to individual choice.

6.9.1 PERINATAL DEPRESSION AND/OR ANXIETY

O28.8-9/ O90.9 + (F32.0-3/F32.8-9/ F33.0-4/F33.8-9/F34.1/F53.0-1/F53.8-9)

DESCRIPTION

See Sections 16.4.1: Depressive disorders and 16.3 Anxiety disorders, for symptoms of depression and/or anxiety. Note that these conditions may occur together in the same person.

» Depression and /or anxiety may be antenatal or postpartum. Postpartum depression usually begins within a month of delivery but can present up to a year after delivery.
» Anxiety disorders may present as fear of labour and childbirth, or other fears e.g. needle phobia. Such fears may interfere with antenatal and postnatal care if they are not addressed.
» Postpartum blues last less than a week, are characterised by irritability, tearfulness, anxiety beginning by day 3 to 5 postpartum. Usually resolve with gentle support but may progress to depression.

CAUTION: Suicide

» Highest risk period is from 6 weeks before to 12 weeks after delivery.
» Adolescent mothers are at particular risk.
» Those with a prior history of self-harm at particular risk.
» See Section 16.7: Suicide risk assessment.
» Inform all healthcare providers involved of suicide risk.
» Ensure psychosocial support – partner/ family/ NGO/ welfare support.
» Optimise treatment of mental illness.
» Do not leave unattended if high risk of self-harm.

GENERAL MEASURES

Antenatal

» Don't stop psychiatric medication if stable on treatment: assess course of illness, severity, and suicide risk. Refer if any or increasing signs of severity.
» Discuss potential benefits/harms of medication to patient and baby as well as alternatives (see Adult Hospital Level Sections 15.2: Anxiety and obsessive-compulsive disorders and 15.3.1: Depressive disorders).
» Antenatal care: provide active adherence support; provide regular, frequent CHW

LoE:IIIb[54]

home visits; watch for preterm labour and/or SGA baby; follow-up on any up-referral.
» Explore and address psychosocial stressors:
  - Mobilise patient's support system.
  - Stress management/coping skills – refer for counselling e.g. at www.sadag.org.
  - Relationship and family issues – refer for counselling, e.g. at www.famsa.org.za
  - Abuse or interpersonal violence - refer to a social worker and for support, e.g. by www.genderjustice.org.za or www.powa.co.za.

Postnatal
» Continue close home-based support of mother and baby for at least the first year.
» Encourage breastfeeding, if not contraindicated medically. (Breastfeeding difficulties may also be associated with depression and anxiety.)

» Optimise treatment of mental illness and co-morbid physical health *LoE:IIIb*[55]
» conditions.
» Optimise psychosocial and parenting support – utilise support groups e.g. at www.sadag.org Refer to Social Welfare if suspect child-care is seriously impaired.

MEDICINE TREATMENT
See Sections 16.4.1: Depressive disorders and 16.3: Anxiety disorders, for treatment of depression and/or anxiety.
» Mild to moderate anxiety – refer for psychotherapy if available (and/or psychosocial support from mothers' groups, NGOs, counsellors) and monitor response.
» Moderate – severe anxiety and/ or depression - antidepressant (SSRI) treatment for early symptom control and prevention of relapse is generally necessary.

REFERRAL
» All severe depression where functioning is severely impaired.
» Poor response to psychological and supportive medication.
» Poor response to first line SSRI (antidepressant) medication.
» Factors requiring urgent admission, invoke the MHCA if necessary:
  - Suicide risk.
  - Any possible psychotic features.
  - Risk to infant.

6.9.2 BIPOLAR, SCHIZOPHRENIA, AND RELATED DISORDERS
O28.8-9/ O90.9 + (F28/F29/F53.0-1/F53.8-9)

DESCRIPTION

Bipolar disorders (BD):
See Adult Hospital STG Sections 15.3.2: Bipolar and related disorders for description and management in the perinatal period.

Note that:
» BD may present with antenatal or postnatal depression, hypomania, mania or psychosis.
» the index episode often occurs postpartum – may be no prior history of mental illness.
» risk of relapse in those known to have BD is increased in pregnancy and postpartum.
» women with bipolar disorder have a 1 in 4 chance of postpartum psychosis.
» BD is associated with increased risk of pre-eclampsia, placental abnormalities, preterm delivery, LBW and SGA babies, neonatal morbidity, and maternal suicide.

Schizophrenia and related disorders:

See Section 16.5: Psychosis and Adult Hospital STG Section 15.5: Psychotic disorders for description and management.

Note that:
» Psychotic disorders are associated with poor pregnancy outcomes as with BD plus increased risk of diabetes, stillbirth, sudden infant death syndrome.
» The rate of deterioration from a non-psychotic to psychotic state may be more rapid in the postpartum period than usual. Take any reports of unusual behaviour by family members as serious and urgent.

CAUTION: Psychosis
» Is a medical emergency; requires urgent hospitalisation.
» Always exclude delirium due to puerperal sepsis.
» May present with subtle, odd behaviour and/or thoughts; women may be blunted, withdrawn, agitated, or aggressive.
» High risk for harm to self or others, suicide, infanticide.
» May severely impair mother-infant bonding and child-care.
» Manage aggressive or disruptive behaviour (see Section 16.1.2: Aggressive disruptive behaviour in adults).

GENERAL MEASURES
» Manage all pregnancies as high-risk in conjunction with obstetrician and psychiatrist.
» Don't stop psychiatric medication – discuss with Doctor/ psychiatrist.
» Actively monitor adherence to antenatal care and hospital referrals.
» Provide regular, frequent CHW home visits.
» Arrange for hospital delivery.
» Postpartum – keep in hospital, monitor mother and new-born, and ensure home-based care and outpatient follow-up before discharge.

Factors requiring urgent admission, invoke the MHCA if necessary:
» Suicide risk.
» Any possible psychotic features.
» Risk to infant.

REFERRAL
All patients.

GYNAECOLOGY

6.10 ECTOPIC PREGNANCY

O00.0-2/O00.8-9

DESCRIPTION

Pregnancy outside the uterus, usually presenting with the combination of:

» amenorrhoea (missed menstrual period),
» sudden lower abdominal pain/ pelvic pain,
» vaginal bleeding (os closed),
» dizziness,
» shock,
» anaemia,
» urine pregnancy test usually positive,
» shoulder tip pain.

Note: Consider ectopic pregnancy in young women who complain of lower abdominal pain.

GENERAL MEASURES

» Monitor vital parameters, e.g. Hb, pulse, BP, temperature.
» Treat for shock if indicated.

MEDICINE TREATMENT

- Sodium chloride 0.9%, IV.

REFERRAL

Urgent

All suspected cases of ectopic pregnancy.

6.11 VAGINAL BLEEDING

Note: Women should receive regular screening for cervical cancer after the age of 30 years. Any opportunity to perform screening should be taken; this includes taking pap smears during pregnancy.

6.11.1 ABNORMAL VAGINAL BLEEDING DURING REPRODUCTIVE YEARS

N92.0-2/3-6

DESCRIPTION

Increased vaginal blood flow in either volume, duration, and/or frequency, including menorrhagia or dysfunctional uterine bleeding.

GENERAL MEASURES

» Assess current contraceptives used.
» Exclude pregnancy complication or organic disease e.g. cervical cancer, fibroids.

MEDICINE TREATMENT

- Combined oral contraceptive pill (ethinylestradiol/levonorgestrel) for 3 to 6 months.
- Ibuprofen, oral, 400 mg 8 hourly with or after a meal as needed for 2 to 3 days.
  - Ibuprofen may reduce blood loss in menorrhagia associated with intrauterine contraceptive device (IUCD) or chronic salpingitis (see Chapter 12: Sexually transmitted infections).

If blood loss has been severe or there are signs of anaemia:

- Ferrous sulfate compound BPC (dried), oral, 170 mg (± 55 mg elemental iron) 12 hourly with meals.

OR

- Ferrous fumarate, oral, 200 mg (± 65 mg elemental iron) 12 hourly.

  - Continue for 3 months after Hb normalises - to replenish body iron stores.
  - Taking iron tablets with meals decreases iron absorption, but improves tolerability. (**Note:** Do not take iron tablets with milk.)

LoE:IIb[56]

REFERRAL

» No improvement.
» Girls <12 years of age with vaginal bleeding before the development of their secondary sexual characteristics.
» For investigation of other causes such as:
  - sexual abuse,
  - foreign bodies,
  - tumours of the genital tract.
» Severe anaemia.

6.11.2 POST-MENOPAUSAL BLEEDING

N95.0

DESCRIPTION

Vaginal bleeding six months following the complete cessation of menstruation.
Note: If bleeding is profuse, stabilise before referral.

REFERRAL

All cases, to exclude underlying malignancy and other pathology.

6.12 DYSMENORRHOEA

N94.4-6

DESCRIPTION

Pain associated with menstrual cycles. In primary dysmenorrhoea there is no known cause. Secondary dysmenorrhoea usually has an organic cause.

GENERAL MEASURES

» Advise and reassure women with primary dysmenorrhoea about the nature of the condition.

» Encourage patient to carry on with normal everyday activities.

MEDICINE TREATMENT

- Ibuprofen, oral, 400 mg 8 hourly with or after a meal as needed for 2 to 3 days.

ADD

- Combined oral contraceptive pill, if symptoms still problematic, and if pregnancy is not planned.

Treat for pelvic infection when present.

REFERRAL

» Poor response to treatment.
» If an organic cause is suspected, e.g. fibroids.

6.13 HORMONE THERAPY (HT)

N95.1-2/N95.8-9

Indications:
Short-term symptomatic relief for severe menopausal symptoms.
For menopausal women, treatment should be ≤5 years.
Risk-benefit assessment should be individualised in all patients.

Contra-indications include:

» Known or suspected estrogen-dependent malignant tumours (such as endometrial cancer).
» Coronary heart disease.
» Active liver disease.
» Women ≥ 60 years of age.
» Current, past or suspected breast cancer.
» Thrombophilia.
» Undiagnosed genital bleeding.
» Previous idiopathic or current venous thromboembolism.
» Untreated endometrial hyperplasia.
» Porphyria cutanea tarda.

GENERAL MEASURES

Prior to starting HT:

» Do breast and gynaecological examination.
» Cervical screening.

MEDICINE TREATMENT (Doctor initiated)

Uterus present (no hysterectomy)
HT can be offered as sequentially opposed or continuous combined preparations. Continuous combined preparations are often preferred if the woman had her last menstrual period (menopause) over a year ago, as they will not usually cause bleeding then. For women who are still menstruating or have recently stopped, sequentially opposed preparations are preferred and will result in regular menstrual periods, whereas continuous combined may result in irregular bleeding.

CONTINUOUS COMBINED THERAPY
• Estradiol/norethisterone acetate, oral, 1mg/0.5mg for 28 days.
OR
• Estradiol/norethisterone acetate, oral, 2mg/1mg for 28 days.
OR
• Conjugated estrogens, oral, 0.3 to 0.625 mg for 28 days. **AND** • Medroxyprogesterone acetate, oral, 2.5 to 5mg daily for 28 days.

OR

SEQUENTIALLY OPPOSED THERAPY
• Estradiol valerate/cyproterone acetate, oral: • Estradiol valerate, oral, 2 mg for 11 days. • Estradiol valerate/cyproterone acetate, oral, 2mg/1mg for 10 days. • Placebo, oral, for 7 days.
OR
• Estradiol valerate, oral, 1 to 2 mg daily for 21 days. **ADD** • Medroxyprogesterone acetate, oral, 5 -10 mg daily from day 12 to 21. Followed by no therapy from day 22 to 28.
OR
• Conjugated estrogens, oral, 0.3 to 0.625 mg daily for 21 days. **ADD** • Medroxyprogesterone acetate, oral, 5–10 mg daily from day 12 to 21. Followed by no therapy from day 22 to 28.
LoE:IVb[57]

Note: Where a dose range is provided start at the lowest possible dose to alleviate symptoms. The need to continue HT should be reviewed annually.

Women with no uterus (post-hysterectomy)

- HT is given as estrogen only, e.g.:
- Estradiol valerate, oral, 1–2 mg daily.

OR

- Conjugated estrogens, oral, 0.3 mg daily to a maximum of 1.25 mg daily.

REFERRAL

» Premature menopause, i.e. <40 years of age.
» Severe osteoporosis
» Management difficulties, e.g. where oestrogen therapy is contra-indicated, poorly tolerated, or ineffective.
» Post-menopausal bleeding.
» If HT needed (symptoms persist) after 5 years of HT or woman ≥ 65 years.

6.14 VAGINAL ULCERS

See Section 12.5: Genital ulcer syndrome (GUS).

6.15 VAGINAL DISCHARGE/LOWER ABDOMINAL PAIN IN WOMEN

See Sections 12.1: Vaginal discharge syndrome (VDS) and 12.2: Lower abdominal pain (LAP).

[1] Misoprostol (medical abortion): NICE. Guideline: Abortion Care, 25 September 2019. https://www.nice.org.uk/guidance/ng140
Misoprostol (medical abortion): WHO. Guideline: Medical management of abortion, 2018. https://www.who.int/reproductivehealth/publications/medical-management-abortion/en/

[2] Morphine, IM (Incomplete 1st trimester miscarriage): National Department of Health, Essential Drugs Programme: Adult Hospital Level STGs and EML, updated edition. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[3] Medical abortion (follow-up pregnancy test): NICE. Guideline: Abortion Care, 25 September 2019. https://www.nice.org.uk/guidance/ng140
Medical abortion (follow-up pregnancy test): Barnhart K, Sammel MD, Chung K, Zhou L, Hummel AC, Guo W. Decline of serum human chorionic gonadotropin and spontaneous complete abortion: defining the normal curve. Obstet Gynecol. 2004 Nov;104(5 Pt 1):975–81. https://pubmed.ncbi.nlm.nih.gov/15516387/

[4] Mifepristone (Medical TOP): Royal College of Obstetrics and Gynaecology Guidelines.The Care of Women Requesting Induced Abortion (Evidence-based Clinical Guideline No. 7), 2011. https://www.rcog.org.uk/en/guidelines-research-services/guidelines/the-care-of-women-requesting-induced-abortion/
Mifepristone (Medical TOP): WHO.Safe abortion: technical and policy guidance for health systems, 2014. http://www.who.int/reproductivehealth/publications/unsafe_abortion/en/
Mifepristone (Medical TOP): National Department of Health, Essential Drugs Programme: Adult Hospital Level STGs and EML, updated version. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list Mifepristone (Medical TOP): Republic of South Africa.Choice on Termination of Pregnancy Act Amendment 1 of 2008. http://www.gov.za/documents/choice-termination-pregnancy-amendment-act
Mifepristone (Medical TOP): National Department of Health: Affordable Medicines, EDP- Primary Health Care. Medicine Review: Can TOPs be accomplished safely and effectively without ultrasound, July 2016. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[5] Misoprostol (Medical TOP): Royal College of Obstetrics and Gynaecology Guidelines. The Care of Women Requesting Induced Abortion (Evidence-based Clinical Guideline No. 7), 2011. https://www.rcog.org.uk/en/guidelines-research-services/guidelines/the-care-of-women-requesting-induced-abortion/
Misoprostol (Medical TOP): WHO.Safe abortion: technical and policy guidance for health systems, 2014. http://www.who.int/reproductivehealth/publications/unsafe_abortion/en/
Misoprostol (Medical TOP): National Department of Health, Essential Drugs Programme: Adult Hospital Level STGs and EML, updated version. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list
Misoprostol (Medical TOP): National Department of Health: Affordable Medicines, EDP- Primary Health Care. Medicine Review: Can TOPs be accomplished safely and effectively without ultrasound, July 2016. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[6] Misoprostol, oral/PV (TOP - Up to 12 weeks and 0 days): World Health Organisation. Medical management of abortion, 2018. http://www.who.int/reproductivehealth/publications/medical-management-abortion/en/

[7] Paracetamol, oral (Medical TOP): National Department of Health, Essential Drugs Programme: Adult Hospital Level STGs and EML, updated version. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[8] Ibuprofen, oral (Medical TOP): National Department of Health, Essential Drugs Programme: Adult Hospital Level STGs and EML, updated version. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[9] Misoprostol (MVA TOP): National Department of Health, Essential Drugs Programme: Adult Hospital Level STGs and EML, updated version. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[10] Morphine, IM (MVA TOP): National Department of Health, Essential Drugs Programme: Adult Hospital Level STGs and EML, updated version. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[11] Paracetamol, oral (MVA TOP): National Department of Health, Essential Drugs Programme: Adult Hospital Level STGs and EML, updated version. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[12] Ibuprofen, oral (MVA TOP): National Department of Health, Essential Drugs Programme: Adult Hospital Level STGs and EML, updated version. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[13] Contraception (TOP): WHO. Safe abortion: technical and policy guidance for health systems, 2012. http://www.who.int/reproductivehealth/publications/unsafe_abortion/9789241548434/en/

[14] Folic acid, oral: De-Regil LM, Peña-Rosas JP, Fernández-Gaxiola AC, Rayco-Solon P. Effects and safety of periconceptional oral folate supplementation for preventing birth defects. Cochrane Database Syst Rev. 2015 Dec 14;(12):CD007950. https://www.ncbi.nlm.nih.gov/pubmed/26662928
Folic acid, oral: Atta CA, Fiest KM, Frolkis AD, Jette N, Pringsheim T, St Germaine-Smith C, Rajapakse T, Kaplan GG, Metcalfe A. Global Birth Prevalence of Spina Bifida by Folic Acid Fortification Status: A Systematic Review and Meta-Analysis. Am J Public Health. 2016 Jan;106(1):e24-34. https://www.ncbi.nlm.nih.gov/pubmed/26562127
Folic acid, oral: Viswanathan M, Treiman KA, Kish-Doto J, Middleton JC, Coker-SchwimmerEJ, Nicholson WK. Folic Acid Supplementation for the Prevention of Neural Tube Defects: An Updated Evidence Report and Systematic Review for the US Preventive Services Task Force. JAMA. 2017 Jan 10;317(2):190-203. https://www.ncbi.nlm.nih.gov/pubmed/28097361
Folic acid, oral: RCOG. Nutrition in Pregnancy: Scientific Impact Paper No. 18. https://www.rcog.org.uk/en/guidelines
Folic acid, oral: ACOG Committee on Practice Bulletins. ACOG practice bulletin. Clinical management guidelines for obstetrician-gynecologists. Number 44, July 2003. (Replaces Committee Opinion Number 252, March 2001) Obstet. Gynecol. 2003;102(1):203–213. https://www.ncbi.nlm.nih.gov/pubmed/12850637
Folic acid, oral: U.S. Preventive Services Task Force.Folic acid for the prevention of neural tube defects: U.S. Preventive Services Task Force recommendation statement. Ann Intern Med. 2009 May 5;150(9):626-31. https://www.ncbi.nlm.nih.gov/pubmed/19414842
Folic acid, oral: Wilson RD; Genetics Committee, Wilson RD, Audibert F, Brock JA, Carroll J, Cartier L, Gagnon A, Johnson JA, Langlois S, Murphy-Kaulbeck L, Okun N, Pastuck M; Special Contributors, Deb-Rinker P, Dodds L, Leon JA, Lowel HL, Luo W,

MacFarlane A, McMillan R, Moore A, Mundle W, O'Connor D, Ray J, Van den Hof M. Pre-conception Folic Acid and Multivitamin Supplementation for the Primary and Secondary Prevention of Neural Tube Defects and Other Folic Acid-Sensitive Congenital Anomalies. J ObstetGynaecol Can. 2015 Jun;37(6):534-52. https://www.ncbi.nlm.nih.gov/pubmed/26334606

[15] Valproic acid – caution in pregnancy: European Medicines Agency - Pharmacovigilance Risk Assessment Committee. Assessment report EMA/198940/2018 - valproate exposure in pregnancy, 8 February 2018. https://www.sahpra.org.za/6-28_valproate_annual_risk_acknowledgement_form_dec18_v1/

Valproic acid – caution in pregnancy: Meador K, Reynolds MW, Crean S, Fahrbach K, Probst C. Pregnancy outcomes in women with epilepsy: a systematic review and meta-analysis of published pregnancy registries and cohorts. Epilepsy Res. 2008 Sep;81(1):1-13. https://www.ncbi.nlm.nih.gov/pubmed/18565732

[16] Ferrous (Iron) supplements, oral - intermittent dosing: National Department of Health: Affordable Medicines, EDP-Primary Health Care level. Medicine Review: Intermittent iron supplementation in pregnancy, 6 November 2017. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

Ferrous (Iron) supplements, oral - intermittent dosing:Peña-Rosas JP, De-Regil LM, Gomez Malave H, Flores-Urrutia MC, Dowswell T. Intermittent oral iron supplementation during pregnancy. Cochrane Database Syst Rev. 2015 Oct 19;(10):CD009997. https://www.ncbi.nlm.nih.gov/pubmed/26482110

[17] Calcium: Hofmeyr GJ, Lawrie TA, Atallah ÁN, Torloni MR. Calcium supplementation during pregnancy for preventing hypertensive disorders and related problems. Cochrane Database Syst Rev. 2018 Oct 1;10(10):CD001059. https://pubmed.ncbi.nlm.nih.gov/30277579/

Calcium: WHO. WHO recommendations for prevention and treatment of pre-eclampsia and eclampsia, 2011. http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/9789241548335/en/

[18] Aspirin: National Department of Health: Affordable Medicines, EDP- Primary Health Care. Medicine Review: Initiation of aspirin at primary health care (PHC) level for reducing the risk of early onset pre-eclampsia in pregnant women with risk factors for the development of early onset pre-eclampsia (e.g. pre-eclampsia in a previous pregnancy, chronic hypertension, diabetes, antiphospholipid syndrome, or systemic lupus erythematosus (SLE)), as a nurse-initiated prescription prior to referral to secondary level of care, May 2024.
https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[19] Methyldopa, oral (iron interaction): Campbell NR, Campbell RR, Hasinoff BB. Ferrous sulfate reduces methyldopa absorption: methyldopa: iron complex formation as a likely mechanism. Clin Invest Med. 1990 Dec;13(6):329-32. https://pubmed.ncbi.nlm.nih.gov/2078911/

Methyldopa, oral (dosing): Wright JM, Orozco-Gonzalez M, Polak G, Dollery CT. Duration of effect of single daily dose methyldopa therapy. Br J Clin Pharmacol. 1982 Jun;13(6):847-54. https://www.ncbi.nlm.nih.gov/pubmed/7093115

[20] Methyldopa, oral (drug interaction with iron): Campbell N, Paddock V, and Sundaram R. Alteration of Methyldopa Absorption, Metabolism, and Blood Pressure Control Caused by Ferrous Sulphate and Ferrous Gluconate. ClinPharmacolTher, 1988, 43:381-6. https://www.ncbi.nlm.nih.gov/pubmed/3356082

[21] Magnesium sulfate, IV/IM (severe cases of preclampsia): Magee LA, Brown MA, Hall DR, Gupte S, Hennessy A, Ananth Karumanchi S et al. The Hypertensive Disorders of Pregnancy: The 2021 International Society for the Study of Hypertesion in Pregnancy Classification, Diagnosis & Management Recommendations for International Practice, Pregnancy Hypertension: An International Journal of Women's Cardiovascular Health (2021), doi: https://doi.org/10.1016/j.preghy.2021.09.008

Magnesium sulfate, IV/IM (severe cases of eclampsia): Which anticonvulsant for women with eclampsia? Evidence from the Collaborative Eclampsia Trial. Lancet. 1995 Jun 10;345(8963):1455-63. Erratum in: Lancet 1995 Jul 22;346(8969):258. https://pubmed.ncbi.nlm.nih.gov/7769899/

Magnesium sulfate, IV/IM (severe cases of eclampsia): Altman D, Carroli G, Duley L, Farrell B, Moodley J, Neilson J, Smith D; Magpie Trial Collaboration Group. Do women with pre-eclampsia, and their babies, benefit from magnesium sulphate? The Magpie Trial: a randomised placebo-controlled trial. Lancet. 2002 Jun 1;359(9321):1877-90. https://pubmed.ncbi.nlm.nih.gov/12057549/

[22] Nifedipine, oral: Magee LA, Brown MA, Hall DR, Gupte S, Hennessy A, Ananth Karumanchi S et al. The Hypertensive Disorders of Pregnancy: The 2021 International Society for the Study of Hypertesion in Pregnancy Classification, Diagnosis & Management Recommendations for International Practice, Pregnancy Hypertension: An International Journal of Women's Cardiovascular Health (2021), doi: https://doi.org/10.1016/j.preghy.2021.09.008

Nifedipine, oral: Sridharan K, Sequeira RP. Drugs for treating severe hypertension in pregnancy: a network meta-analysis and trial sequential analysis of randomized clinical trials. Br J Clin Pharmacol. 2018 Sep;84(9):1906-1916. https://pubmed.ncbi.nlm.nih.gov/29974489/

[23] Calcium gluconate 10%, IV: National Department of Health, Essential Drugs Programme: Adult Hospital level STG, updated version. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[24] Magnesium sulfate, IV: National Department of Health, Essential Drugs Programme: Adult Hospital level STG, updated version. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[25] Nifedipine, oral: Magee LA, Brown MA, Hall DR, Gupte S, Hennessy A, Ananth Karumanchi S et al. The Hypertensive Disorders of Pregnancy: The 2021 International Society for the Study of Hypertesion in Pregnancy Classification, Diagnosis & Management Recommendations for International Practice, Pregnancy Hypertension: An International Journal of Women's Cardiovascular Health (2021), doi: https://doi.org/10.1016/j.preghy.2021.09.008

[26] Ferrous (Iron) supplements: Reveiz L, Gyte GM, Cuervo LG, Casasbuenas A. Treatments for iron-deficiency anaemia in pregnancy. Cochrane Database Syst Rev. 2011 Oct 5;(10):CD003094. http://www.ncbi.nlm.nih.gov/pubmed/21975735

[27] Lidocaine 1% without adrenaline (epinephrine) - diluent:Kingston M, French P, Higgins S, McQuillanO,Sukthankar A, Stott C, McBrienB, Tipple C, Turner A, Sullivan AK; Members of the Syphilis guidelines revision group 2015, Radcliffe K, Cousins D, FitzGerald M, Fisher M, Grover D, Higgins S, Kingston M, Rayment M, Sullivan A. UK national guidelines on the management of syphilis 2015.Int J STD AIDS. 2016 May;27(6):421-46. https://www.ncbi.nlm.nih.gov/pubmed/26721608

[28] Listeriosis: National Institute of Communicable Diseases. Listeriosis: Clinical recommendations for diagnosis and treatment, 5 December 2017. http://www.nicd.ac.za/

[29] High-risk cases for preterm delivery: National Department of Health, Essential Drugs Programme: Adult Hospital Level STGs and EML, updated version. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[30] <36 weeks PTL (no tocylosis): Department of Health, Republic of South Africa. 2015. Guidelines for Maternity care in South Africa, 5th edition. http://www.health.gov.za/

[31] Dexamethasone, IM: McGoldrick E, Stewart F, Parker R, Dalziel SR. Antenatal corticosteroids for accelerating fetal lung maturation for women at risk of preterm birth. Cochrane Database Syst Rev. 2020 Dec 25;12(12):CD004454. https://pubmed.ncbi.nlm.nih.gov/33368142/

Dexamethasone, IM: FIGO Working Group on Good Clinical Practice in Maternal-Fetal Medicine. Good clinical practice advice: Antenatal corticosteroids for fetal lung maturation. Int J Gynaecol Obstet. 2019 Mar;144(3):352-355. https://pubmed.ncbi.nlm.nih.gov/30710360/

[32] Betamethasone, IM: McGoldrick E, Stewart F, Parker R, Dalziel SR. Antenatal corticosteroids for accelerating fetal lung maturation for women at risk of preterm birth. Cochrane Database Syst Rev. 2020 Dec 25;12(12):CD004454. https://pubmed.ncbi.nlm.nih.gov/33368142/

Betamethasone, IM: FIGO Working Group on Good Clinical Practice in Maternal-Fetal Medicine. Good clinical practice advice: Antenatal corticosteroids for fetal lung maturation. Int J Gynaecol Obstet. 2019 Mar;144(3):352-355. https://pubmed.ncbi.nlm.nih.gov/30710360/

[33] Dexamethasone, IM: McGoldrick E, Stewart F, Parker R, Dalziel SR. Antenatal corticosteroids for accelerating fetal lung maturation for women at risk of preterm birth. Cochrane Database Syst Rev. 2020 Dec 25;12(12):CD004454. https://pubmed.ncbi.nlm.nih.gov/33368142/

Dexamethasone, IM: FIGO Working Group on Good Clinical Practice in Maternal-Fetal Medicine. Good clinical practice advice: Antenatal corticosteroids for fetal lung maturation. Int J Gynaecol Obstet. 2019 Mar;144(3):352-355. https://pubmed.ncbi.nlm.nih.gov/30710360/

[34] Betamethasone, IM: McGoldrick E, Stewart F, Parker R, Dalziel SR. Antenatal corticosteroids for accelerating fetal lung maturation for women at risk of preterm birth. Cochrane Database Syst Rev. 2020 Dec 25;12(12):CD004454. https://pubmed.ncbi.nlm.nih.gov/33368142/

Betamethasone, IM: FIGO Working Group on Good Clinical Practice in Maternal-Fetal Medicine. Good clinical practice advice: Antenatal corticosteroids for fetal lung maturation. Int J Gynaecol Obstet. 2019 Mar;144(3):352-355. https://pubmed.ncbi.nlm.nih.gov/30710360/

[35] Betamethasone, IM: McGoldrick E, Stewart F, Parker R, Dalziel SR. Antenatal corticosteroids for accelerating fetal lung maturation for women at risk of preterm birth. Cochrane Database Syst Rev. 2020 Dec 25;12(12):CD004454. https://pubmed.ncbi.nlm.nih.gov/33368142/

Betamethasone, IM: FIGO Working Group on Good Clinical Practice in Maternal-Fetal Medicine. Good clinical practice advice: Antenatal corticosteroids for fetal lung maturation. Int J Gynaecol Obstet. 2019 Mar;144(3):352-355. https://pubmed.ncbi.nlm.nih.gov/30710360/

[36] Antibiotic therapy (PROM): Kenyon S, Boulvain M, Neilson JP. Antibiotics for preterm rupture of membranes. Cochrane Database Syst Rev. 2013 Dec 2;(12):CD001058. https://pubmed.ncbi.nlm.nih.gov/24297389/

Antibiotic therapy (PROM): Verani JR, McGee L, Schrag SJ; Division of Bacterial Diseases, National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention (CDC). Prevention of perinatal group B streptococcal disease--revised guidelines from CDC, 2010. MMWR Recomm Rep. 2010 Nov 19;59(RR-10):1-36. https://pubmed.ncbi.nlm.nih.gov/21088663/

Antibiotic therapy (PROM): ACOG. Prelabor Rupture of Membranes: ACOG Practice Bulletin, Number 217. Obstet Gynecol. 2020 Mar;135(3):e80-e97. https://pubmed.ncbi.nlm.nih.gov/32080050/

Antibiotic therapy (PROM): Navathe R, Schoen CN, Heidari P, Bachilova S, Ward A, Tepper J et al. Azithromycin vs erythromycin for the management of preterm premature rupture of membranes. Am J Obstet Gynecol. 2019 Aug;221(2):144.e1-144.e8. https://pubmed.ncbi.nlm.nih.gov/30904320/

[37] Antibiotic therapy (pre-referral dose with urgent referral: prolonged pre-labour rupture of membranes): Saccone G, Berghella V. Antibiotic prophylaxis for term or near-term premature rupture of membranes: metaanalysis of randomized trials. Am J Obstet Gynecol. 2015 May;212(5):627.e1-9. https://pubmed.ncbi.nlm.nih.gov/25555659/

[38] Morphine, IM (intrapartum care):. South African Medicines Formulary, 14th Edition. Division of Clinical Pharmacology. University of Cape Town, 2022.

[39] Dextrose, 10%, IV: National Department of Health: Integrated Management of Childhood Illness (IMCI) Guidelines, 2019 (updated). https://www.knowledgehub.org.za/e-library

Dextrose, 10%, IV: National Department of Health: Guidelines for the care of all newborns in District Hospitals, Health Centres and Midwife Obstetric Units in South Africa: Neonate care charts, March 2014. https://www.knowledgehub.org.za/e-library

[40] Hepatitis B immunoglobulin, neonatal transmission: National Department of Health, Essential Drugs Programme: Paediatric Hospital Level STGs and EML, 2023 draft version. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[41] Hepatitis B vaccine, neonatal transmission: National Department of Health, Essential Drugs Programme: Paediatric Hospital Level STGs and EML, 2023 draft version. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

[42] Oxytocin, IV: HofmeyrGJ, Gülmezoglu AM, Novikova N, Linder V, Ferreira S, Piaggio G. Misoprostol to prevent and treat postpartum haemorrhage: a systematic review and meta-analysis of maternal deaths and dose-related effects. Bull World Health Organ. 2009 Sep;87(9):666-77. http://www.ncbi.nlm.nih.gov/pubmed/19784446

Oxytocin IV:Gülmezoglu AM, Villar J, Ngoc NT, Piaggio G, Carroli G, Adetoro L, Abdel-Aleem H, Cheng L, Hofmeyr G, Lumbiganon P, Unger C, Prendiville W, Pinol A, Elbourne D, El-Refaey H, Schulz K; WHO Collaborative Group To Evaluate Misoprostol in the Management of the Third Stage of Labour. WHO multicentre randomised trial of misoprostol in the management of the third stage of labour. Lancet. 2001 Sep 1;358(9283):689-95. http://www.ncbi.nlm.nih.gov/pubmed/11551574

[43] Tranexamic Acid, IV: Gallos I, Devall A, Martin J, Middleton L, Beeson L, Galadanci H, et al. Randomized Trial of Early Detection and Treatment of Postpartum Hemorrhage. New England Journal of Medicine. 2023 May 9;0(0):null.

[44] Misoprostol: Widmer M, Blum J, HofmeyrGJ, Carroli G, Abdel-Aleem H, Lumbiganon P, Nguyen TN, Wojdyla D, Thinkhamrop J, Singata M, Mignini LE, Abdel-Aleem MA, Tran ST, Winikoff B. Misoprostol as an adjunct to standard uterotonics for treatment of post-partum haemorrhage: a multicentre, double-blind randomised trial. Lancet. 2010 May 22;375(9728):1808-13. http://www.ncbi.nlm.nih.gov/pubmed/20494730

Misoprostol: World Health Organisation.WHO recommendations for the prevention and treatment of postpartum haemorrhage, 2012. http://apps.who.int/iris/bitstream/10665/75411/1/9789241548502_eng.pdf

[45] Fluconazole, oral (pregnancy): Mølgaard-Nielsen D, Pasternak B, Hviid A. Use of oral fluconazole during pregnancy and the risk of birth defects. N Engl J Med. 2013 Aug 29;369(9):830-9. http://www.ncbi.nlm.nih.gov/pubmed/23984730

Fluconazole, oral (pregnancy): Mølgaard-Nielsen D, Svanström H, Melbye M, Hviid A, Pasternak B. Association Between Use of Oral Fluconazole During Pregnancy and Risk of Spontaneous Abortion and Stillbirth. JAMA. 2016 Jan 5;315(1):58-67. http://www.ncbi.nlm.nih.gov/pubmed/26746458

Fluconazole, oral (pregnancy): Govender NP, Meintjes G (Chairpersons), Bicanic T, Dawood H, Harrison TS, Jarvis JN, Karstaedt AS, Maartens G, McCarthy KM, Rabie H, Variava E, Venter WDF(Expert panel members), Boulware DR, Chiller T, Meya DB, Scriven J (Reviewers). Guideline for the prevention, diagnosis and management of cryptococcal meningitis among HIV-infected persons: 2013 update. S Afr J HIV Med 2013;14(2):76-86. http://www.sajhivmed.org.za/index.php/hivmed/article/view/82/128

[46] Fluconazole, oral (breastfeeding): South African Medicines Formulary, 14th Edition. Division of Clinical Pharmacology. University of Cape Town, 2022.

Fluconazole, oral (breastfeeding): Govender NP, Meintjes G (Chairpersons), Bicanic T, Dawood H, Harrison TS, Jarvis JN, Karstaedt AS, Maartens G, McCarthy KM, Rabie H, Variava E, Venter WDF(Expert panel members), Boulware DR, Chiller T, Meya DB, Scriven J (Reviewers). Guideline for the prevention, diagnosis and management of cryptococcal meningitis among HIV-infected persons: 2013 update. S Afr J HIV Med 2013;14(2):76-86. http://www.sajhivmed.org.za/index.php/hivmed/article/view/82/128

[47] Dolutegravir (WOCP & pregnancy): National Department of Health: Affordable Medicines, EDP-PHC/Adult Hospital level. Medicine Review: Dolutegravir in pregnancy, Jun2 2021. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

Dolutegravir (WOCP & pregnancy): South African National Department of Health. 2023 Antiretroviral Therapy Clinical Guidelines for the Management of HIV in Adults, Pregnancy and Breastfeeding, Adolescents, Children, Infants and Neonates. April 2023.

[48] Abacavir: WHO. Consolidated guidelines on HIV prevention, testing, treatment, service delivery and monitoring: recommendations for a public health approach, July 2021. https://www.who.int/publications/i/item/9789240031593

Abacavir: National Department of Health: National Consolidated Guidelines for the Management of HIV in Adults, Adolescents, Children and Infants and Prevention of Mother-to-Child Transmission, June 2020. https://www.knowledgehub.org.za/elibrary/national-consolidated-guidelines-management-hiv-adults-adolescents-children-and-infants

[49] Second line (NNRTI-failure) and HbsAg positive: WHO. Consolidated guidelines on HIV prevention, testing, treatment, service delivery and monitoring: recommendations for a public health approach, July 2021. https://www.who.int/publications/i/item/9789240031593

Second line (NNRTI-failure) and HbsAg positive: National Department of Health: National Consolidated Guidelines for the Management of HIV in Adults, Adolescents, Children and Infants and Prevention of Mother-to-Child Transmission, June 2020. https://www.knowledgehub.org.za/elibrary/national-consolidated-guidelines-management-hiv-adults-adolescents-children-and-infants

[50] ART in pregnancy (Previous PMTCT or ART loss to follow-up): WHO. Consolidated guidelines on HIV prevention, testing, treatment, service delivery and monitoring: recommendations for a public health approach, July 2021. https://www.who.int/publications/i/item/9789240031593

ART in pregnancy (Previous PMTCT or ART loss to follow-up): National Department of Health: National Consolidated Guidelines for the Management of HIV in Adults, Adolescents, Children and Infants and Prevention of Mother-to-Child Transmission, June 2020. https://www.knowledgehub.org.za/elibrary/national-consolidated-guidelines-management-hiv-adults-adolescents-children-and-infants

[51] Abacavir: WHO. Consolidated guidelines on HIV prevention, testing, treatment, service delivery and monitoring: recommendations for a public health approach, July 2021. https://www.who.int/publications/i/item/9789240031593

Abacavir: National Department of Health: National Consolidated Guidelines for the Management of HIV in Adults, Adolescents, Children and Infants and Prevention of Mother-to-Child Transmission, June 2020. https://www.knowledgehub.org.za/elibrary/national-consolidated-guidelines-management-hiv-adults-adolescents-children-and-infants

[52] ART in pregnancy: WHO. Consolidated guidelines on HIV prevention, testing, treatment, service delivery and monitoring: recommendations for a public health approach, July 2021. https://www.who.int/publications/i/item/9789240031593

ART in pregnancy: National Department of Health: National Consolidated Guidelines for the Management of HIV in Adults, Adolescents, Children and Infants and Prevention of Mother-to-Child Transmission, June 2020. https://www.knowledgehub.org.za/elibrary/national-consolidated-guidelines-management-hiv-adults-adolescents-children-and-infants

[53] VL monitoring in pregnancy: WHO. Consolidated guidelines on HIV prevention, testing, treatment, service delivery and monitoring: recommendations for a public health approach, July 2021. https://www.who.int/publications/i/item/9789240031593

VL monitoring in pregnancy: National Department of Health: National Consolidated Guidelines for the Management of HIV in Adults, Adolescents, Children and Infants and Prevention of Mother-to-Child Transmission, June 2020. https://www.knowledgehub.org.za/elibrary/national-consolidated-guidelines-management-hiv-adults-adolescents-children-and-infants

VL monitoring in pregnancy: Wessels J, Sherman G, Bamford L, et al. The updated South African National Guideline for the Prevention of Mother to Child Transmission of Communicable Infections (2019). Southern African Journal of HIV Medicine [Internet]. AOSIS; 2020 Jul 8;21(1). Available from: http://dx.doi.org/10.4102/sajhivmed.v21i1.1079

[54] Antenatal care (actively support labour companionship): Bohren MA, Hofmeyr GJ, Sakala C, Fukuzawa RK, Cuthbert A. Continuous support for women during childbirth. Cochrane Database Syst Rev. 2017 Jul 6;7(7):CD003766. https://pubmed.ncbi.nlm.nih.gov/28681500/

[55] Breastfeeding practices (impacted by maternal health): Coo S, García MI, Mira A, Valdés V. The Role of Perinatal Anxiety and Depression in Breastfeeding Practices. Breastfeed Med. 2020 Aug;15(8):495-500. https://pubmed.ncbi.nlm.nih.gov/32522015/

[56] Ferrous sulfate, oral: South African Medicines Formulary, 14th Edition. Division of Clinical Pharmacology. University of Cape Town, 2022.

Ferrous sulfate, oral: Reveiz L, Gyte GM, Cuervo LG, Casasbuenas A. Treatments for iron-deficiency anaemia in pregnancy. Cochrane Database Syst Rev. 2011 Oct 5;(10):CD003094. https://www.ncbi.nlm.nih.gov/pubmed/21975735

Ferrous sulfate, oral : Rimon E, Kagansky N, Kagansky M, Mechnick L, Mashiah T, Namir M, Levy S. Are we giving too much iron? Low-dose iron therapy is effective in octogenarians. Am J Med. 2005 Oct;118(10):1142-7. https://www.ncbi.nlm.nih.gov/pubmed/16194646

Ferrous fumarate, oral: South African Medicines Formulary, 14th Edition. Division of Clinical Pharmacology. University of Cape Town, 2022.

[57] Hormone therapy (HT): National Department of Health, Essential Drugs Programme: Adult Hospital Level STGs and EML, updated version. https://www.knowledgehub.org.za/content/standard-treatment-guidelines-and-essential-medicines-list

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SOUTH AFRICAN NATIONAL DEPARTMENT OF HEALTH
NEMLC SUMMARY REPORT ON UPDATES MADE TO THE
THE STANDARD TREATMENT GUIDELINES AND ESSENTIAL MEDICINE LIST GUIDANCE PRODUCTS
BROAD REPRODUCTIVE
PRIMARY HEALTH CARE
PHC Chapter 6: OBSTETRICS & GYNAECOLOGY

Document Version

Report Version	**Date**	**Detail**
V 1.0	*26 March 2026*	Guidance on Anti-D Immunoglobulin

Specific guidance products (Tick relevant and specify chapter number)

No	Guidance Product	*Tick*	*Number*
1.	Primary Health Care Level STGs	✓	6.2 Miscarriage 6.3.1 Management of termination of pregnancy at primary health care level: gestation UP TO 12 weeks and 0 days
2.	Adult Hospital Level STGs	✓	6.18 The Rhesus Negative Woman
3.	Paediatric Hospital Level STGs		
4.	Tertiary and Quaternary EML		

Refer to Adult Hospital Level Obstetrics NEMLC Report for rationale and changes to the AHL Level

Summary Tables

Medicine Amendments

Kindly review the medicine amendments in the context of the respective standard treatment guideline (STG).

STG/SECTION	**GUIDANCE PRODUCTS (Tick relevant)**				**MEDICINE / MANAGEMENT**	**ADDED / DELETED / AMENDED**	**TI* CONSIDERATIONS (if applicable)**
	PHC STGs & EML	AH STG & EML	PaedH STG & EML	TQ EML			
Report Version v1.0							
6.2 MISCARRIAGE	X	X			Anti-D Immunoglobulin	Retained – Instructions amended	Not applicable
6.3.1 MANAGEMENT OF TERMINATION OF PREGNANCY AT PRIMARY HEALTH CARE LEVEL:	X	X			Anti-D Immunoglobulin	Deleted – Instructions amended	Not applicable

GESTATION UP TO 12 WEEKS AND 0 DAYS							

The report provides an update on the following:

1. Miscarriage – revision of Anti D immunoglobulin administration

Report V1.0

6.2 MISCARRIAGE

Anti-D Immunoglobulin: Retained (Instructions amended)

An external comment was received from a Provincial Pharmaceutical Therapeutics Committee member through provincial pharmaceutical services raising that there is a contradiction/vagueness between the Primary level and AHL essential medicines list (EML), regarding Anti-D immunoglobulin, administration, for miscarriage or termination of pregnancy. The AHL Hospital level EML only recommends anti-D for the 2nd trimester while the PHC EML recommends Anti-D immunoglobulin if a surgical procedure is done, which presumably would include 1st trimester cases. This discussion at provincial level emanated because of the stock supply constraints of Anti-D immunoglobulin by the supplier. A circular is in place from NDOH (2021) advising on the restricted use as there is no alternative.

In pregnancies of up to 9 weeks gestation, the theoretical risk of maternal Rh sensitization associated with termination of pregnancy (TOP), or miscarriage is very low. Consequently, determining Rh status and offering anti-D prophylaxis are not regarded as essential prerequisites for early TOP or early pregnancy loss. This is in alignment with the South African TOP guideline[1]. Between 9 and 12 weeks, the risk remains sufficiently low that professional societies advise against routine administration of Anti-D immunoglobulin, considering both the low likelihood of sensitisation and the logistical challenges related to limited Anti-D immunoglobulin supply. Therefore, as anti-D immunoglobulin administration in the first trimester is not harmful, no specific cautionary statements are required.

In parallel, at the primary care level, access to ultrasound may be limited, making precise gestational dating difficult. In the interest of equity and operational simplicity, it was advisable to remove the first-trimester Rh section from the primary care guideline and adopt the same approach outlined in the Adult STG and the NDoH circular[2], which is based on the current constraints in Anti-D immunoglobulin availability.

The Standard Treatment Guideline was Updated as Follows:

From:

MEDICINE TREATMENT

For inevitable/incomplete miscarriages:

- Oxytocin, IV, 20 units, diluted in 1000 mL sodium chloride 0.9% and infused at 125 mL/hour (avoid where threatened miscarriage is suspected).

[1] National Department of Health. 219. National Clinical Guideline for Implementation of the Choice on Termination of Pregnancy Act.

[2] National Department of Health. 2021. Recommendations for restricted use of Anti-D immunoglobulin.

For all Rh-negative non-sensitised women who had a surgical procedure to manage a miscarriage:

- Anti-D immunoglobulin, IM, 50 mcg preferably within 72 hours but may be given up to 7 days following management of miscarriage.

Do not offer Anti-D prophylaxis to women who:

» only received medical management for a miscarriage, or
» had a threatened miscarriage, or
» had a complete miscarriage.

To

MEDICINE TREATMENT

For inevitable/incomplete miscarriages:

Oxytocin, IV, 20 units, diluted in 1000 mL sodium chloride 0.9% and infused at 125 mL/hour (avoid where threatened miscarriage is suspected).

For Rh-negative non-sensitised women from 13 to 22 weeks Anti-D immunoglobulin, IM, 50 mcg preferably within 72 hours but may be given up to 7 days following management of miscarriage.

6.3.1 MANAGEMENT OF TERMINATION OF PREGNANCY AT PRIMARY HEALTH CARE LEVEL: GESTATION UP TO 12 WEEKS AND 0 DAYS

Anti-D Immunoglobulin: Deleted (In alignment with instructions in 6.2 Miscarriage and the AHL obstetrics Chapter)

The STG was aligned to 6.2 Miscarriage and the AHL obstetrics Chapter.

The STG was updated as follows:

MEDICINE TREATMENT

Medical TOP - if gestation ≤12 weeks and 0 days:
Mifepristone, oral, 200 mg, immediately as a single dose.

Followed 24 to 48 hours later by:

Misoprostol, SL, 800 mcg by self-administration at home*.
If expulsion does not occur within 4 hours of misoprostol administration, a second dose of misoprostol 400 mcg, oral/PV may be given.
*From >9 weeks to ≤12 weeks- return to the facility within 48 hours to take misoprostol on-site (early morning) due to the risk of heavy bleeding.

Note: Bleeding may persist for up to 1 week. If there is no bleeding after the second dose of misoprostol, the woman must return to the facility as soon as possible as there is a possibility of an incomplete procedure or ectopic pregnancy.

For pain:
After administration of mifepristone, start:
Paracetamol, oral, 500 mg to 1 g, 4 to 6 hourly as required (to a maximum of 4 g in 24 hours).
Maximum dose: 15 mg/kg/dose.
ADD
After expulsion is complete:
Ibuprofen, oral, 400 mg 8 hourly with or after a meal, as needed for 2 to 3 days.
OR

TOP using manual vacuum aspiration (MVA) - if gestation ≤12 weeks and 0 days:
Misoprostol, PV, 400 mcg 3 hours before vacuum aspiration of the uterus.

Routine analgesia for vacuum aspiration:
Morphine, IM, 0.1 mg/kg 30 minutes before aspiration procedure, to a maximum of 10 mg (Doctor prescribed).

Alternatively, consider paracervical block if trained in technique. See the Adult Hospital Level STGs and EML, Section 5.9.1: TOP: Management of pregnancies up to the Twelfth week of gestation (12 weeks and 0 days)

Oral analgesia as required for 48 hours:
Paracetamol, oral, 500 mg to 1 g, 4 to 6 hourly as required (to a maximum of 4 g in 24 hours).
Maximum dose: 15 mg/kg/dose.

AND

Ibuprofen, oral, 400 mg 8 hourly with or after a meal, as needed for 2 to 3 days.

~~For both medical and surgical TOPs (MVA):~~
~~In Rh-negative, non-sensitised women: (O36.0)~~
~~• Anti-D immunoglobulin, IM, 50 mcg preferably within 72 hours but may be given up to 7 days following TOP.~~

Contraception:
Counsel all women on effective contraception, especially long-acting reversible methods.
All methods can be given at the time of the procedure, with the exception of the IUCD at a medical TOP.

Review all patients after 7 days: if bleeding persists, arrange urgent ultrasound.