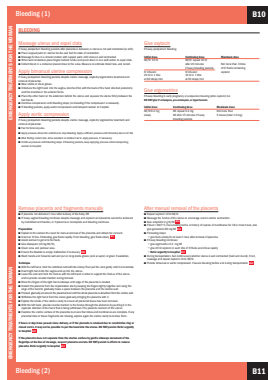


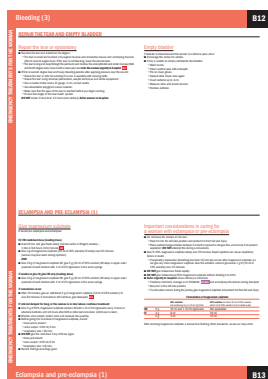
EMERGENCY TREATMENTS FOR THE WOMAN



B9 AIRWAY, BREATHING AND CIRCULATION
 Manage the airway and breathing
 Insert IV line and give fluids



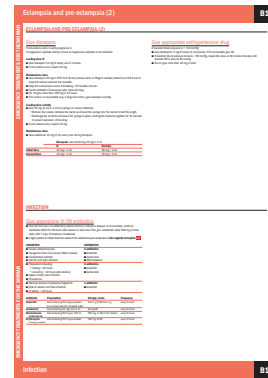
B10 BLEEDING (1)
 Massage uterus and expel clots
 Apply bimanual uterine compression
 Apply aortic compression
 Give oxytocin
 Give ergometrine



B11 BLEEDING (2)
 Remove placenta and fragments manually
 After manual removal of the placenta

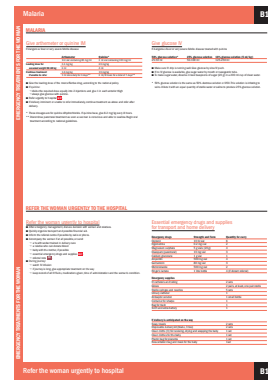
B12 BLEEDING (3)
 Repair the tear
 Empty bladder

B13 ECLAMPSIA AND PRE-ECLAMPSIA (1)
 Important considerations in caring for a woman with eclampsia and pre-eclampsia
 Give magnesium sulphate



B14 ECLAMPSIA AND PRE-ECLAMPSIA (2)
 Give diazepam
 Give appropriate antihypertensive

B15 INFECTION
 Give appropriate IV/IM antibiotics



B16 MALARIA
 Give artemether or quinine IM
 Give glucose IV

B17 REFER THE WOMAN URGENTLY TO THE HOSPITAL
 Refer the woman urgently to the hospital
 Essential emergency drugs and supplies for transport and home delivery

- This section has details on emergency treatments identified during Rapid assessment and management (RAM) **B3-B6** to be given before referral.
- Give the treatment and refer the woman urgently to hospital **B17**.
- If drug treatment, give the first dose of the drugs before referral. Do not delay referral by giving non-urgent treatments.

AIRWAY, BREATHING AND CIRCULATION

Manage the airway and breathing

If the woman has great difficulty breathing and:

- If you suspect obstruction:
 - Try to clear the airway and dislodge obstruction
 - Help the woman to find the best position for breathing
 - **Urgently refer the woman to hospital.**
- If the woman is unconscious:
 - Keep her on her back, arms at the side
 - Tilt her head backwards (unless trauma is suspected)
 - Lift her chin to open airway
 - Inspect her mouth for foreign body; remove if found
 - Clear secretions from throat.
- If the woman is not breathing:
 - Ventilate with bag and mask until she starts breathing spontaneously
- If woman still has great difficulty breathing, keep her propped up, and
- **Refer the woman urgently to hospital.**

Insert IV line and give fluids

- Wash hands with soap and water and put on gloves.
- Clean woman's skin with spirit at site for IV line.
- Insert an intravenous line (IV line) using a 16-18 gauge needle.
- Attach Ringer's lactate or normal saline. Ensure infusion is running well.

Give fluids at **rapid rate** if shock, systolic BP < 90 mmHg, pulse > 110/minute, or heavy vaginal bleeding:

- Infuse 1 litre in 15-20 minutes (as rapid as possible).
- Infuse 1 litre in 30 minutes at 30 ml/minute. Repeat if necessary.
- Monitor every 15 minutes for:
 - blood pressure (BP) and pulse
 - shortness of breath or puffiness.
- Reduce the infusion rate to 3 ml/minute (1 litre in 6-8 hours) when pulse slows to less than 100/minute, systolic BP increases to 100 mmHg or higher.
- Reduce the infusion rate to 0.5 ml/minute if breathing difficulty or puffiness develops.
- Monitor urine output.
- Record time and amount of fluids given.

Give fluids at **moderate rate** if severe abdominal pain, obstructed labour, ectopic pregnancy, dangerous fever or dehydration:

- Infuse 1 litre in 2-3 hours.

Give fluids at **slow rate** if severe anaemia/severe pre-eclampsia or eclampsia:

- Infuse 1 litre in 6-8 hours.

If intravenous access not possible

- Give oral rehydration solution (ORS) by mouth if able to drink, or by nasogastric (NG) tube.
- Quantity of ORS: 300 to 500 ml in 1 hour.

DO NOT give ORS to a woman who is unconscious or has convulsions.

BLEEDING

Massage uterus and expel clots

If heavy postpartum bleeding persists after placenta is delivered, or uterus is not well contracted (is soft):

- Place cupped palm on uterine fundus and feel for state of contraction.
- Massage fundus in a circular motion with cupped palm until uterus is well contracted.
- When well contracted, place fingers behind fundus and push down in one swift action to expel clots.
- Collect blood in a container placed close to the vulva. Measure or estimate blood loss, and record.

Apply bimanual uterine compression

If heavy postpartum bleeding persists despite uterine massage, oxytocin/ergometrine treatment and removal of placenta:

- Wear sterile or clean gloves.
- Introduce the right hand into the vagina, clenched fist, with the back of the hand directed posteriorly and the knuckles in the anterior fornix.
- Place the other hand on the abdomen behind the uterus and squeeze the uterus firmly between the two hands.
- Continue compression until bleeding stops (no bleeding if the compression is released).
- If bleeding persists, apply aortic compression and transport woman to hospital.

Apply aortic compression

If heavy postpartum bleeding persists despite uterine massage, oxytocin/ergometrine treatment and removal of placenta:

- Feel for femoral pulse.
- Apply pressure above the umbilicus to stop bleeding. Apply sufficient pressure until femoral pulse is not felt.
- After finding correct site, show assistant or relative how to apply pressure, if necessary.
- Continue pressure until bleeding stops. If bleeding persists, keep applying pressure while transporting woman to hospital.

Give oxytocin

If heavy postpartum bleeding

Initial dose	Continuing dose	Maximum dose
IM/IV: 10 IU	IM/IV: repeat 10 IU after 20 minutes if heavy bleeding persists	Not more than 3 litres of IV fluids containing oxytocin
IV infusion: 20 IU in 1 litre at 60 drops/min	IV infusion: 10 IU in 1 litre at 30 drops/min	

Give ergometrine

If heavy bleeding in early pregnancy or postpartum bleeding (after oxytocin) but

DO NOT give if eclampsia, pre-eclampsia, or hypertension

Initial dose	Continuing dose	Maximum dose
IM/IV: 0.2 mg slowly	IM: repeat 0.2 mg IM after 15 minutes if heavy bleeding persists	Not more than 5 doses (total 1.0 mg)

Remove placenta and fragments manually

- If placenta not delivered 1 hour after delivery of the baby, OR
- If heavy vaginal bleeding continues despite massage and oxytocin and placenta cannot be delivered by controlled cord traction, or if placenta is incomplete and bleeding continues.

Preparation

- Explain to the woman the need for manual removal of the placenta and obtain her consent.
- Insert an IV line. If bleeding, give fluids rapidly. If not bleeding, give fluids slowly **B9**.
- Assist woman to get onto her back.
- Give diazepam (10 mg IM/IV).
- Clean vulva and perineal area.
- Ensure the bladder is empty. Catheterize if necessary **B12**.
- Wash hands and forearms well and put on long sterile gloves (and an apron or gown if available).

Technique

- With the left hand, hold the umbilical cord with the clamp. Then pull the cord gently until it is horizontal.
- Insert right hand into the vagina and up into the uterus.
- Leave the cord and hold the fundus with the left hand in order to support the fundus of the uterus and to provide counter-traction during removal.
- Move the fingers of the right hand sideways until edge of the placenta is located.
- Detach the placenta from the implantation site by keeping the fingers tightly together and using the edge of the hand to gradually make a space between the placenta and the uterine wall.
- Proceed gradually all around the placental bed until the whole placenta is detached from the uterine wall.
- Withdraw the right hand from the uterus gradually, bringing the placenta with it.
- Explore the inside of the uterine cavity to ensure all placental tissue has been removed.
- With the left hand, provide counter-traction to the fundus through the abdomen by pushing it in the opposite direction of the hand that is being withdrawn. This prevents inversion of the uterus.
- Examine the uterine surface of the placenta to ensure that lobes and membranes are complete. If any placental lobe or tissue fragments are missing, explore again the uterine cavity to remove them.

If hours or days have passed since delivery, or if the placenta is retained due to constriction ring or closed cervix, it may not be possible to put the hand into the uterus. DO NOT persist. Refer urgently to hospital **B17.**

If the placenta does not separate from the uterine surface by gentle sideways movement of the fingertips at the line of cleavage, suspect placenta accreta. DO NOT persist in efforts to remove placenta. Refer urgently to hospital **B17.**

After manual removal of the placenta

- Repeat oxytocin 10 IU IM/IV.
- Massage the fundus of the uterus to encourage a tonic uterine contraction.
- Give ampicillin 2 g IV/IM **B15**.
- If fever >38.5°C, foul-smelling lochia or history of rupture of membranes for 18 or more hours, also give gentamicin 80 mg IM **B15**.
- If bleeding stops:
 - give fluids slowly for at least 1 hour after removal of placenta.
- If heavy bleeding continues:
 - give ergometrine 0.2 mg IM
 - give 20 IU oxytocin in each litre of IV fluids and infuse rapidly
 - **Refer urgently to hospital **B17**.**
- During transportation, feel continuously whether uterus is well contracted (hard and round). If not, massage and repeat oxytocin 10 IU IM/IV.
- Provide bimanual or aortic compression if severe bleeding before and during transportation **B10**.

REPAIR THE TEAR AND EMPTY BLADDER

Repair the tear or episiotomy

- Examine the tear and determine the degree:
 - The tear is small and involved only vaginal mucosa and connective tissues and underlying muscles (first or second degree tear). If the tear is not bleeding, leave the wound open.
 - The tear is long and deep through the perineum and involves the anal sphincter and rectal mucosa (third and fourth degree tear). Cover it with a clean pad and **refer the woman urgently to hospital B17.**
- If first or second degree tear and heavy bleeding persists after applying pressure over the wound:
 - Suture the tear or refer for suturing if no one is available with suturing skills.
 - Suture the tear using universal precautions, aseptic technique and sterile equipment.
 - Use a needle holder and a 21 gauge, 4 cm, curved needle.
 - Use absorbable polyglycon suture material.
 - Make sure that the apex of the tear is reached before you begin suturing.
 - Ensure that edges of the tear match up well.

DO NOT suture if more than 12 hours since delivery. **Refer woman to hospital.**

Empty bladder

If bladder is distended and the woman is unable to pass urine:

- Encourage the woman to urinate.
- If she is unable to urinate, catheterize the bladder:
 - Wash hands
 - Clean urethral area with antiseptic
 - Put on clean gloves
 - Spread labia. Clean area again
 - Insert catheter up to 4 cm
 - Measure urine and record amount
 - Remove catheter.

ECLAMPSIA AND PRE-ECLAMPSIA (1)

Give magnesium sulphate

If severe pre-eclampsia and eclampsia

IV/IM combined dose (loading dose)

- Insert IV line and give fluids slowly (normal saline or Ringer's lactate) – 1 litre in 6-8 hours (3 ml/minute) **B9**.
- Give 4 g of magnesium sulphate (20 ml of 20% solution) IV slowly over 20 minutes (woman may feel warm during injection).

AND:

- Give 10 g of magnesium sulphate IM: give 5 g (10 ml of 50% solution) IM deep in upper outer quadrant of each buttock with 1 ml of 2% lignocaine in the same syringe.

If unable to give IV, give IM only (loading dose)

- Give 10 g of magnesium sulphate IM: give 5 g (10 ml of 50% solution) IM deep in upper outer quadrant of each buttock with 1 ml of 2% lignocaine in the same syringe.

If convulsions recur

- After 15 minutes, give an additional 2 g of magnesium sulphate (10 ml of 20% solution) IV over 20 minutes. If convulsions still continue, give diazepam **B14**.

If referral delayed for long, or the woman is in late labour, continue treatment:

- Give 5 g of 50% magnesium sulphate solution IM with 1 ml of 2% lignocaine every 4 hours in alternate buttocks until 24 hours after birth or after last convulsion (whichever is later).
- Monitor urine output: collect urine and measure the quantity.
- Before giving the next dose of magnesium sulphate, ensure:
 - knee jerk is present
 - urine output >100 ml/4 hrs
 - respiratory rate >16/min.
- **DO NOT** give the next dose if any of these signs:
 - knee jerk absent
 - urine output <100 ml/4 hrs
 - respiratory rate <16/min.
- Record findings and drugs given.

Important considerations in caring for a woman with eclampsia or pre-eclampsia

- Do not leave the woman on her own.
 - Help her into the left side position and protect her from fall and injury
 - Place padded tongue blades between her teeth to prevent a tongue bite, and secure it to prevent aspiration (**DO NOT** attempt this during a convulsion).
- Give IV 20% magnesium sulphate slowly over 20 minutes. Rapid injection can cause respiratory failure or death.
 - If respiratory depression (breathing less than 16/minute) occurs after magnesium sulphate, do not give any more magnesium sulphate. Give the antidote: calcium gluconate 1 g IV (10 ml of 10% solution) over 10 minutes.
- **DO NOT** give intravenous fluids rapidly.
- **DO NOT** give intravenously 50% magnesium sulphate without diluting it to 20%.
- **Refer urgently to hospital** unless delivery is imminent.
 - If delivery imminent, manage as in Childbirth **D1-D29** and accompany the woman during transport
 - Keep her in the left side position
 - If a convulsion occurs during the journey, give magnesium sulphate and protect her from fall and injury.

Formulation of magnesium sulphate

	50% solution: vial containing 5 g in 10 ml (1g/2ml)	20% solution: to make 10 ml of 20% solution, add 4 ml of 50% solution to 6 ml sterile water
IM	5 g 10 ml and 1 ml 2% lignocaine	Not applicable
IV	4 g 2 g	8 ml 4 ml 20 ml 10 ml

After receiving magnesium sulphate a woman feel flushing, thirst, headache, nausea or may vomit.

ECLAMPSIA AND PRE-ECLAMPSIA (2)

Give diazepam

If convulsions occur in early pregnancy or
 If magnesium sulphate toxicity occurs or magnesium sulphate is not available.

Loading dose IV

- Give diazepam 10 mg IV slowly over 2 minutes.
- If convulsions recur, repeat 10 mg.

Maintenance dose

- Give diazepam 40 mg in 500 ml IV fluids (normal saline or Ringer's lactate) titrated over 6-8 hours to keep the woman sedated but rousable.
- Stop the maintenance dose if breathing <16 breaths/minute.
- Assist ventilation if necessary with mask and bag.
- Do not give more than 100 mg in 24 hours.
- If IV access is not possible (e.g. during convulsion), give diazepam rectally.

Loading dose rectally

- Give 20 mg (4 ml) in a 10 ml syringe (or urinary catheter):
 - Remove the needle, lubricate the barrel and insert the syringe into the rectum to half its length.
 - Discharge the contents and leave the syringe in place, holding the buttocks together for 10 minutes to prevent expulsion of the drug.
- If convulsions recur, repeat 10 mg.

Maintenance dose

- Give additional 10 mg (2 ml) every hour during transport.

Diazepam: vial containing 10 mg in 2 ml

	IV	Rectally
Initial dose	10 mg = 2 ml	20 mg = 4 ml
Second dose	10 mg = 2 ml	10 mg = 2 ml

Give appropriate antihypertensive drug

If diastolic blood pressure is > 110 mmHg:

- Give hydralazine 5 mg IV slowly (3-4 minutes). If IV not possible give IM.
- If diastolic blood pressure remains > 90 mmHg, repeat the dose at 30 minute intervals until diastolic BP is around 90 mmHg.
- Do not give more than 20 mg in total.

INFECTION

Give appropriate IV/IM antibiotics

- Give the first dose of antibiotic(s) before referral. If referral is delayed or not possible, continue antibiotics IM/IV for 48 hours after woman is fever free. Then give amoxicillin orally 500 mg 3 times daily until 7 days of treatment completed.
- If signs persist or mother becomes weak or has abdominal pain postpartum, **refer urgently to hospital B17**.

CONDITION	ANTIBIOTICS
<ul style="list-style-type: none"> ■ Severe abdominal pain ■ Dangerous fever/very severe febrile disease ■ Complicated abortion ■ Uterine and fetal infection 	3 antibiotics <ul style="list-style-type: none"> ■ Ampicillin ■ Gentamicin ■ Metronidazole
<ul style="list-style-type: none"> ■ Postpartum bleeding <ul style="list-style-type: none"> → lasting > 24 hours → occurring > 24 hours after delivery ■ Upper urinary tract infection ■ Pneumonia 	2 antibiotics: <ul style="list-style-type: none"> ■ Ampicillin ■ Gentamicin
<ul style="list-style-type: none"> ■ Manual removal of placenta/fragments ■ Risk of uterine and fetal infection ■ In labour > 24 hours 	1 antibiotic: <ul style="list-style-type: none"> ■ Ampicillin

Antibiotic	Preparation	Dosage/route	Frequency
Ampicillin	Vial containing 500 mg as powder: to be mixed with 2.5 ml sterile water	First 2 g IV/IM then 1 g	every 6 hours
Gentamicin	Vial containing 40 mg/ml in 2 ml	80 mg IM	every 8 hours
Metronidazole DO NOT GIVE IM	Vial containing 500 mg in 100 ml	500 mg or 100 ml IV infusion	every 8 hours
Erythromycin (if allergy to ampicillin)	Vial containing 500 mg as powder	500 mg IV/IM	every 6 hours

MALARIA**Give arthemeter or quinine IM**

If dangerous fever or very severe febrile disease

	Arthemeter	Quinine*
	1ml vial containing 80 mg/ml	2 ml vial containing 300 mg/ml
Leading dose for assumed weight 50-60 kg	3.2 mg/kg 2 ml	20 mg/kg 4 ml
Continue treatment if unable to refer	1.6 mg/kg 1 ml once daily for 3 days**	10 mg/kg 2 ml/8 hours for a total of 7 days**

- Give the loading dose of the most effective drug, according to the national policy.
- If quinine:
 - divide the required dose equally into 2 injections and give 1 in each anterior thigh
 - always give glucose with quinine.
- Refer urgently to hospital **B17**.
- If delivery imminent or unable to refer immediately, continue treatment as above and refer after delivery.

* These dosages are for quinine dihydrochloride. If quinine base, give 8.2 mg/kg every 8 hours.

** Discontinue parenteral treatment as soon as woman is conscious and able to swallow. Begin oral treatment according to national guidelines.

Give glucose IV

If dangerous fever or very severe febrile disease treated with quinine

50% glucose solution*	25% glucose solution	10% glucose solution (5 ml/kg)
25-50 ml	50-100 ml	125-250 ml

- Make sure IV drip is running well. Give glucose by slow IV push.
- If no IV glucose is available, give sugar water by mouth or nasogastric tube.
- To make sugar water, dissolve 4 level teaspoons of sugar (20 g) in a 200 ml cup of clean water.

* 50% glucose solution is the same as 50% dextrose solution or D50. This solution is irritating to veins. Dilute it with an equal quantity of sterile water or saline to produce 25% glucose solution.

REFER THE WOMAN URGENTLY TO THE HOSPITAL

Refer the woman urgently to hospital

- After emergency management, discuss decision with woman and relatives.
- Quickly organize transport and possible financial aid.
- Inform the referral centre if possible by radio or phone.
- Accompany the woman if at all possible, or send:
 - a health worker trained in delivery care
 - a relative who can donate blood
 - baby with the mother, if possible
 - essential emergency drugs and supplies **B17**.
 - referral note **N2**.
- During journey:
 - watch IV infusion
 - if journey is long, give appropriate treatment on the way
 - keep record of all IV fluids, medications given, time of administration and the woman's condition.

Essential emergency drugs and supplies for transport and home delivery

Emergency drugs	Strength and Form	Quantity for carry
Oxytocin	10 IU vial	6
Ergometrine	0.2 mg vial	2
Magnesium sulphate	5 g vials (20 g)	4
Diazepam (parenteral)	10 mg vial	3
Calcium gluconate	1 g vial	1
Ampicillin	500 mg vial	4
Gentamicin	80 mg vial	3
Metronidazole	500 mg vial	2
Ringer's lactate	1 litre bottle	4 (if distant referral)

Emergency supplies	
IV catheters and tubing	2 sets
Gloves	2 pairs, at least, one pair sterile
Sterile syringes and needles	5 sets
Urinary catheter	1
Antiseptic solution	1 small bottle
Container for sharps	1
Bag for trash	1
Torch and extra battery	1

If delivery is anticipated on the way	
Soap, towels	2 sets
Disposable delivery kit (blade, 3 ties)	2 sets
Clean cloths (3) for receiving, drying and wrapping the baby	1 set
Clean clothes for the baby	1 set
Plastic bag for placenta	1 set
Resuscitation bag and mask for the baby	1 set

Refer the woman urgently to hospital

B17