THE SAFER MOTHERHOOD
Knowledge Transfer Program

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Pre-eclampsia

Diagnosis and Management

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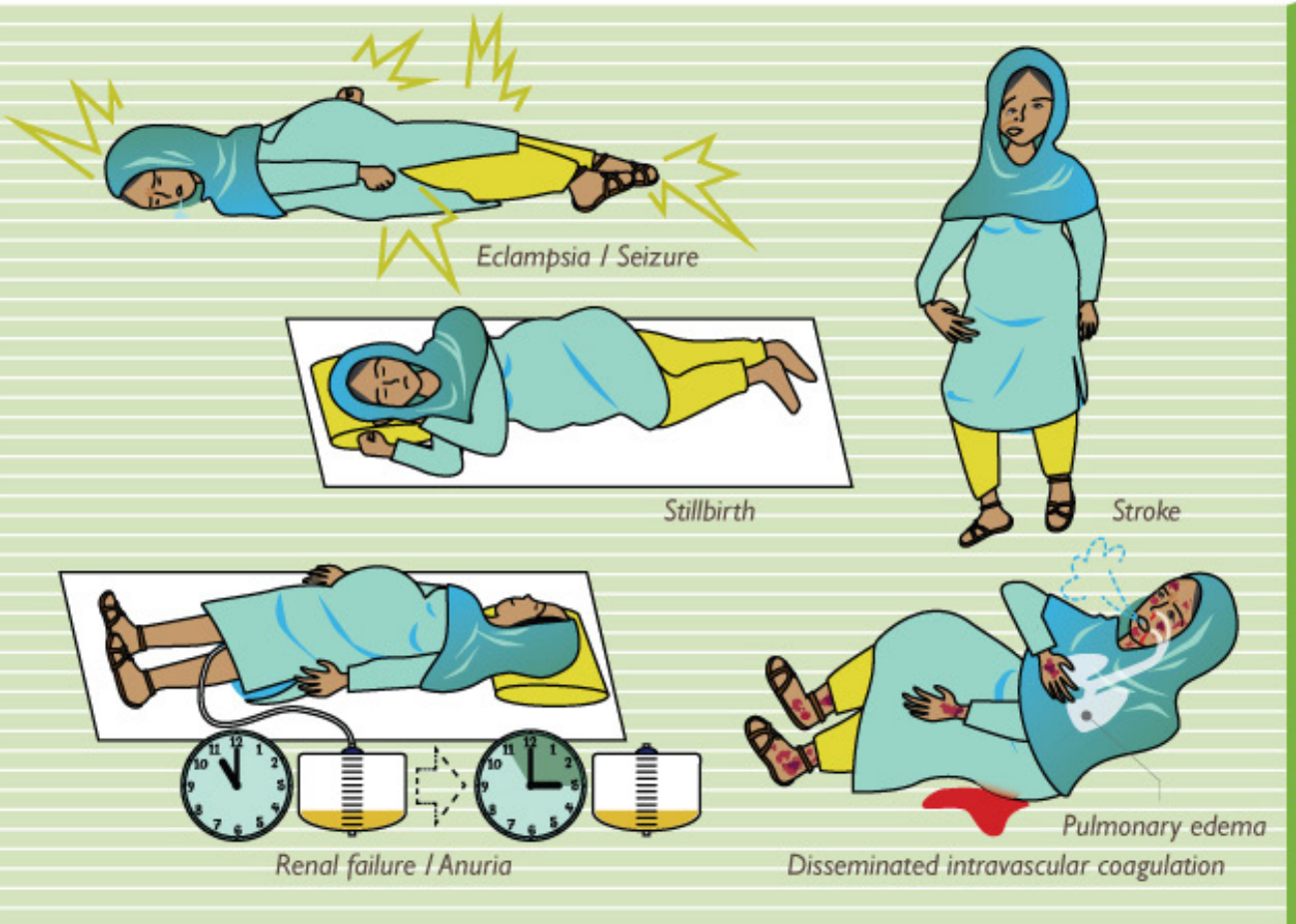
WHAT IS PRE-ECLAMPSIA?

Hypertension in pregnancy : $BP \geq 140/90_{mmHg}$

Proteinuria in pregnancy : $Protein \geq 300_{mg}$ in 24-hour urine

OR $\geq 1+$ on dipstick

Serious consequences of pre-eclampsia include:



Pre-eclampsia is more than hypertension, proteinuria, and seizures. It is often without any symptoms until the condition deteriorates. The progressive, and unpredictable nature of the disease makes it potentially life-threatening.

Diagnosing

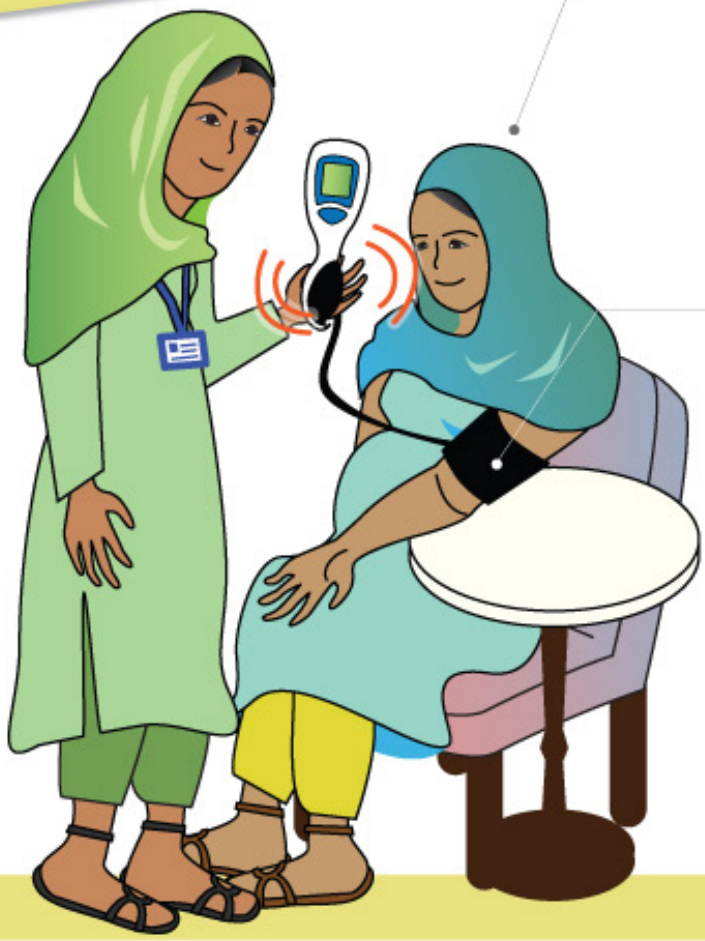
The two primary signs used to diagnose pre-eclampsia are

blood pressure & proteinuria.

Tips

for taking blood pressure measurements accurately:

1. Blood Pressure Assessment



Women should be seated ***comfortably*** *with back supported.*

The woman should ***stay still*** *for 5 minutes before and during the measurement.*

The cuff should be placed around the upper arm, and the arm should be supported at the ***level of the woman's heart.***

Measurements should be ***repeated at least once,*** *after a minimum of 1 minute wait, to ensure accuracy.*

Community Level Interventions for Pre-eclampsia

CLIP

2. Proteinuria Assessment

It is best to use a urine sample that is freshly collected directly into the specimen bottle.

Tips *for testing urine sample:*

After dipping *the protein test strip into the sample,* ***wait one minute*** *before reading the result.*

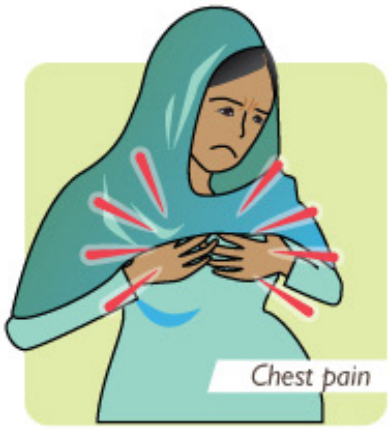
Assessing Disease Severity Part I:

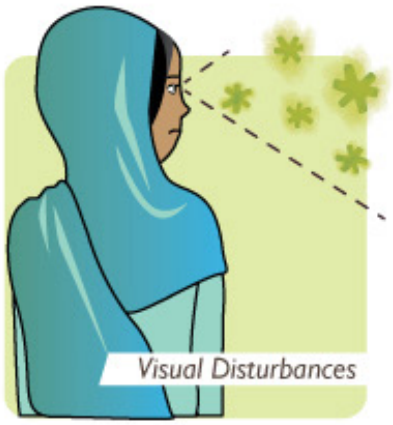
Severe hypertension *(very high blood pressure) is defined as* $BP \geq 160/110$ *mmHg*

Women with ***severe hypertension*** *are at high risk for* ***maternal complications***

Women with the highest level of ***proteinuria*** *are at high risk of* ***stillbirth***

Assessing Disease Severity Part2:





*The presence of any of these **symptoms** in a woman with **high blood pressure in pregnancy** indicates that she is **severely ill** and at higher risk of complications such as seizures.*

Development of the disorder early in pregnancy is another risk factor for complications of pre-eclampsia.

*Therefore, **estimating gestational age early** is an important part of monitoring pregnant women.*

Antihypertensive treatment

Acute treatment of severe hypertension should begin **immediately**.

Once blood pressure is **reduced** to the non-severe range (< 160/110 mmHg) ongoing treatment should be initiated using ***oral medication***.

Antihypertensive therapy administration instructions

by severity of hypertension

severe hypertension

Defined as

BP ≥ 160/110 mmHg

Treatment goal: <160/110mmHg over **hours**

(not below 130/80mmHg on antihypertensive therapy)

Oral treatment:

α-Methyldopa Repeat dose after 3 hr until treatment goal achieved	**750 mg**
Nifedipine capsules Repeat dose after 30 minutes until treatment goal achieved	**5-10 mg**
Nifedipine intermediate-release tablets Repeat dose after 1hr until treatment goal achieved	**10 mg**
Labetalol Repeat dose after 1hr until treatment goal achieved	**200 mg**

Intravenous treatment:

Hydralazine : Repeat dose after 30 minutes until treatment goal achieved, to a maximum of 20mg	**5 mg i.v.**
Labetalol : Repeat dose after 30 minutes until treatment goal achieved, to maximum of 300mg then switch to oral	**10-20 mg i.v.**

non-severe hypertension

Defined as

BP between 140-159/ 90-109 mmHg

Treatment goal: <140/90mmHg over **days**

(not below 130/80mmHg on antihypertensive therapy)

Oral treatment:

α-Methyldopa Given 3-4 x daily to a maximum of 2000mg/d	**250 mg**
Nifedipine intermediate-release tablets (e.g. 'retard' or 'PA') Given 2 x daily to a maximum of 120mg/d	**10-20 mg**
Labetalol Given 2-4 x daily to a maximum of 1200mg/d	**100-200 mg**

Intravenous treatment:

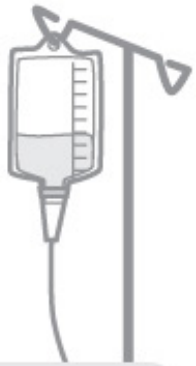
N/A

Eclampsia prevention & treatment

Prevention or Treatment – of the – seizures of eclampsia

Recommended treatment or prevention regimens for $MgSO_4$ include both

intramuscular AND combined ***intramuscular and intravenous*** regimens.

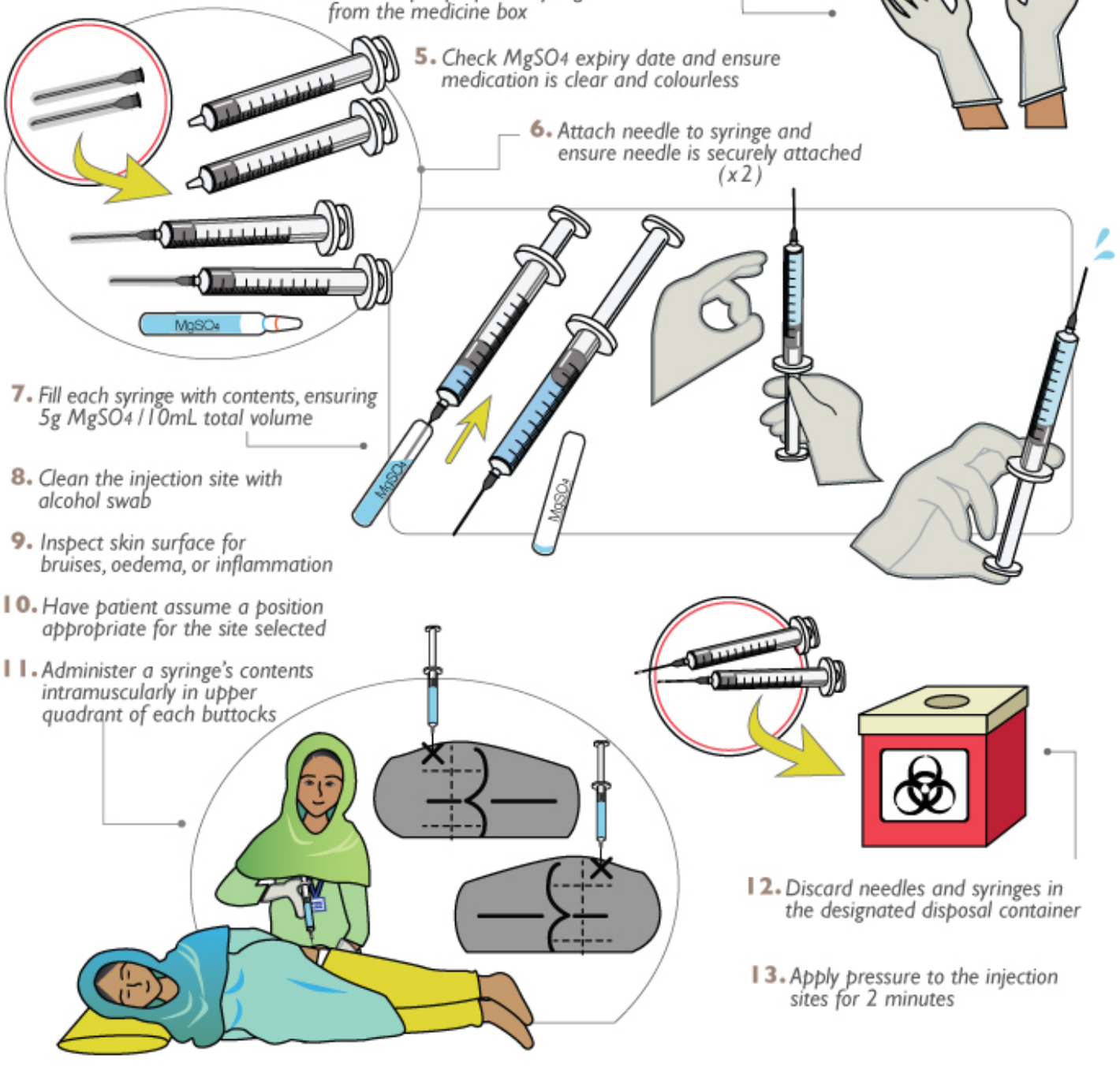


$MgSO_4$	Intramuscular only	Intramuscular and intravenous
Loading dose*	**10g i.m.** (5g/10mL solution in each buttock)	**4g i.v.** with **10g i.m.** (5g in each buttock)
Maintenance dose*	**5g** i.m. into alternating buttocks every 4 hours for 24 hours	Either **1-2 g/hr i.v.** OR **5g** in alternating buttocks every 4 hours for 24 hours

* NOTE: If the women received a loading dose of $MgSO_4$ in the community (by i.v. / i.m. or i.m. only), maintenance therapy should be initiated if she arrives at the facility within 6hrs. If more than 6hrs has passed since the loading dose was administered in the community, a second loading dose should be administered prior to starting maintenance therapy.

Magnesium Sulphate ($MgSO_4$)
intramuscular administration instructions:

1. Explain the reason and procedure briefly to the woman or attendant (as appropriate)
2. Wash hands
3. Put on gloves
4. Take the pre-prepared syringe from the medicine box
5. Check $MgSO_4$ expiry date and ensure medication is clear and colourless
6. Attach needle to syringe and ensure needle is securely attached (x 2)
7. Fill each syringe with contents, ensuring 5g $MgSO_4$ / 10mL total volume
8. Clean the injection site with alcohol swab
9. Inspect skin surface for bruises, oedema, or inflammation
10. Have patient assume a position appropriate for the site selected
11. Administer a syringe's contents intramuscularly in upper quadrant of each buttocks
12. Discard needles and syringes in the designated disposal container
13. Apply pressure to the injection sites for 2 minutes



Gestational age at diagnosis

WEEKS	**20** wk - viability	viability - **30** wk	**30** - **35** wk	**35** - **37** wk	≥**37** wk
Transfer to referral centre while pregnant	Not necessary. However, centre should be competent with midtrimester termination.	Yes, if stable for transfer	Yes, if stable for transfer. Perinatal outcomes unchanged if transfer occurs postpartum.		
Expectant management	No, as routine. May be attempted close to viability to give fetus a chance.	Yes, as significant perinatal gains without an increase in adverse maternal outcomes. Delivery decision guided by results of maternal and fetal testing. If testing not possible, delivery the safer option.		Yes, due to immediate morbidity and school age issues related to late preterm birth.	No, IOL indicated.
Corticosteroids for fetal lung maturation	No	Yes	Yes	up to 34+6 wk or 35+6 wk according to local protocol	No
Route of delivery	Vaginal (misoprostol or Foley catheter for labour induction).	Probable Caesarean section, unless intrauterine fetal death.	Vaginal, although fetal, maternal, or uterine status may preclude vaginal delivery.		

Postpartum Patient Care

Severe disease may deteriorate transiently postpartum.

- Maintain surveillance and provide organ system support, as necessary.

Postpartum BP reaches its maximal levels between days 3-6 after delivery.

- If patient is on antihypertensives antenatally, consider maintaining treatment postpartum.
- BP targets can be lower as there are no fetal concerns. In high-income countries, more than 50% of eclampsia occurs postpartum.