# Risk of preterm birth

## Course on identifying and managing the risk of preterm birth

WHO ACS-IR

VERSION FOR WHO ACS-IR TRIAL

# Contents



## Acronyms and abbreviations

| | |
|---|---|
| ANC | antenatal care |
| APH | antepartum haemorrhage |
| BP | blood pressure |
| CPAP | continuous positive airway pressure |
| CS | caesarean section |
| CTG | cardiotocography |
| EDD | estimated date of delivery |
| FH | fundal height |
| FHR | fetal heart rate |
| GA | gestational age |
| IM | intramuscular |
| IV | intravenous |
| LCG | Labour Care Guide |
| LDHF | low-dose, high-frequency |
| LMP | last menstrual period |
| $MgSO_4$ | magnesium sulphate |
| NICU | neonatal intensive care unit |
| PE | pre-eclampsia |
| PPROM | preterm prelabour rupture of membranes |
| PTB | preterm birth |
| PTL | preterm labour |
| QI | quality improvement |
| SBAR | situation, background, assessment, recommendation |
| SPE/E | severe pre-eclampsia or eclampsia |
| U/S | ultrasound |
| UTI | urinary tract infection |
| WHO | World Health Organization |

For the facilitator

# Plan and prepare to facilitate a course

This course is for all health workers who care for women at birth. All women should give birth in facilities with the capacity to identify and manage the risk of preterm birth safely.

## Plan and coordinate

- Coordinate with facility leadership and local organizers well in advance.
- Use the supplementary sample documents – like agendas, room layouts, checklists and evaluations. Download and modify these documents to fit your needs.
- Review clinical data with facility management before the course – to identify strengths and gaps.

## Adapt the course to the needs

The full package of interventions covered in this course should only be implemented at higher-level facilities (referral hospitals) that meet the criteria for providing care if there is a high risk of preterm birth (PTB).

However, antibiotics for preterm prelabour rupture of membranes (PPROM) should be implemented at any level of care where providers are able to diagnose PPROM and administer antibiotics.

Each page is marked with tags, to let you know if it is relevant for referral hospitals and health centres. Define the agenda based on the content you will be covering.

**Color tags with checkmarks indicate the page is relevant for the type of facility**

Referral hospitals ✓ Health centres ✓

**Grey tags with an X mean skip this page**

Referral hospitals ✗ Health centres ✗

## Prepare yourself to facilitate

- Review the agenda.
- Familiarize yourself with all pages in this Flip Chart.
- Rehearse in advance how you will deliver the course and how you will best engage the participants.
- Practise each of the demonstrations and activities.

## Prepare the learning materials

In addition to this Flip Chart, use these resources to support learning and ensure an impactful course delivery. Make sure you know them well, and have them ready for the course.

### Action plan

A large poster showing the steps to take during care, to be used during the course and displayed afterwards at the facility, as a job aid for daily clinical practice.

### Provider guide

A booklet for every health worker to use during the course and keep afterwards, for valuable resources such as the medication chart and continued practice.

### Gestational age job aid

A flow chart for determining gestational age by comparing a woman's last menstrual period with ultrasound dating.

### Assessments

As part of the learning process, the course includes a pre-course and post-course knowledge check.

## Set up the course for active participation

The number of participants in a course may vary, but ensure you can divide into small groups of six participants per facilitator to ensure the quality of practice activities.

## Prepare to assess

- Assessments support learning and help you identify gaps and needs.
- Ensure participants complete knowledge assessments before and after the course.

## Enable continued practice

Support the facilities to embrace continued practice after the course.

- Make the Action Plan available and visible in the facility.
- Appoint two participants from each facility to become **practice coordinators** and support their peers.
- Ensure participants have the equipment, space and time to carry out low-dose, high-frequency (LDHF) practice at the facilities – using the activities in the Provider Guide and the case practice app on hmbs.org/case-practice/rptb

**The Risk of Preterm Birth course aims to translate standards into care. It incorporates the latest WHO recommendations related to preterm birth and includes links to key references and resources for training.**

**This course has been developed for the WHO ACS-IR trial.**

For the facilitator

# Using this Flip Chart to facilitate learning

The Flip Chart is a guide for the facilitator of a course. It includes all you need to facilitate learning in an engaging and participatory way. Place the Flip Chart with the illustration pages facing the participants, and the text facing you. The content is divided into sections with different learning methodologies, explained below. Point to the Action Plan as you facilitate. Ask participants to turn to specific pages in the Provider Guide for activities.

## Explain

These sections cover key knowledge the participants will need.

- Use your own words, be concise and avoid just reading.
- To engage participants, prepare how you will deliver explanations in advance.

## Demonstrate

- Show participants the actions they need to take, and prepare them for practice.
- Always emphasize and model respectful care and good communication.

## Discuss

- Encourage participants to share and explore what is done in their facility.
- Find ways to overcome barriers and put new skills into practice.

## Ask

- Ask questions to review and reinforce learning.
- Create a safe space and ensure all participants participate.

## Activities

There are different types of activities in the course, to involve participants in an engaging way of learning.

### Cases

- Allow participants time to use newly learned or refreshed knowledge.
- Spend more time engaging participants than explaining.
- Encourage self-reflection and discussion with the team.

### Scenario practice

- Reinforce skills learned in a simulation practice.
- Ensure every group has all the equipment on the checklist.
- Encourage self-reflection and feedback.
- One or two participants will take the role of health workers, using only the Action Plan, and referral form or Labour Care Guide for guidance.
- Ensure the rest follow the actions on the Action Plan.
- You will act as the woman, give prompts as needed and provide vitals and other information when participants assess for them.
- Alternatively, a participant could be the woman with your guidance.

## Assess knowledge

Assess the participants' knowledge before and after the course.

- Use the knowledge checks available as supplementary material.
- Use the results from the pre-course test to tailor facilitation to the needs.

## Equipment checklist

For each group of 6 participants and 1 facilitator

### Learning materials

- ☐ 1 Flip Chart
- ☐ 1 Action Plan
- ☐ 6 Provider Guides (1 per participant)

### General equipment

- ☐ Blood pressure cuff and stethoscope
- ☐ Speculum
- ☐ Clock or watch with second hand

### For referral hospitals only

- ☐ Syringes and needles– referral hospitals only
- ☐ Personal protective equipment – referral hospitals only

### Mock medications and IV

- ☐ Dexamethasone or betamethasone
- ☐ Nifedipine
- ☐ Lignocaine 2%
- ☐ Tape

### For referral hospitals only

- ☐ Magnesium sulphate ($MgSO_4$)
- ☐ Calcium gluconate 10%
- ☐ IV catheter and tubing
- ☐ 500 mL crystalloid IV fluids
- ☐ Sterile water for dilution

### Additional materials

- ☐ Knowledge assessments
- ☐ Gestational age (GA) job aid
- ☐ GA wheel
- ☐ Referral form
- ☐ Labour Care Guide (LCG) for preterm labour (PTL)/preterm birth (PTB)
- ☐ $MgSO_4$ monitoring form

For management

# Assess system readiness

To ensure quality of care, it is essential to conduct a careful assessment of the facility prior to offering care interventions for high risk of preterm birth. This step also is important whether your facility meets the eligibility criteria.

## Who should do this assessment and when?

This assessment should be carried out by facility managers before the facility starts offering the interventions for high risk of preterm birth.

### Criteria for use of all interventions to care for women at risk of preterm birth

The complete set of interventions requires a competent team of heath workers who can:

1. Accurately assess gestational age with ultrasound.
2. Recognize and manage women at high risk of preterm birth within 7 days.
3. Recognize or rule-out clinical evidence of maternal infection.
4. Provide adequate preterm newborn care – resuscitation, kangaroo mother care, thermal care, feeding support, infection treatment, monitoring of hypoglycemia and respiratory support including continuous positive airway pressure (CPAP), as needed.
5. Provide adequate childbirth care – including capacity to recognize and safely manage preterm labour and birth.

## For facilities that meet all the criteria

Before introducing care interventions for high risk of PTB or PTB at your facility, assess:

- 24/7 availability of:
  - ultrasound for GA,
  - intrapartum monitoring for high-risk women **and**
  - a caesarean birth.
- Supply of antenatal corticosteroids (ACS), tocolytics, $MgSO_4$ and antibiotics.
- Availability of equipment, medications, infrastructure and supplies to provide safe preterm newborn care.
- Referral system and feedback loops.
- Documentation, data collection and use.

Monitor and regularly assess the facility's preparedness and readiness to diagnose and manage PTB. Rapid assessments can be carried out with simple tools such as checklists to showcase the facility's current capacity and any gaps in service.

## For facilities that do not meet the criteria

Establish a network of care with the help of the Ministry of Health to ensure in-utero transfer of the newborn to designated facilities with the capacity to provide care for women with high risk of PTB and manage preterm newborns.

- Train health workers at peripheral facilities to identify eligible population for ACS, $MgSO_4$, tocolytics and antibiotic prophylaxis and refer them to designated facilities.
- Improve referral and transport to facilities that can offer care if there is a high risk of PTB.
- Invite discussion at the facility:
  - Who will be responsible in facility for assessing system readiness and forming a plan for any needed changes?
  - How will you participate in this process?

## Further assessment and preparation

Once the essential criteria have been met, further assessment and preparation will help ensure systems are in place and ready to provide safe, effective, consistent quality care.

1. To be able to plan adequately, you first need to estimate the need for the services: How many preterm births do you expect in a month?
2. Next, who will be involved in delivering those services? Do they require additional training?
3. Is there a working perinatal team with clear communication pathways between maternal and neonatal care providers?
4. How will you ensure the needed supplies and commodities are available when and where they are needed?
5. Does outreach need to be done to increase referral of women at high risk of preterm birth from lower levels of the health care system? How will you communicate outcomes and feedback back to those initiating referrals?
6. Finally, how will you know if you are succeeding and how to improve?
7. When possible, carry out a facility assessment and form an action plan with the facility perinatal or quality improvement team prior to this clinical training.

For management

# Data management

Data is a management tool. If we don't measure what we do, we don't know if we are improving quality of care. Using data can show us what we are doing well and what requires improvement. This will help us prioritize actions to solve problems.

## Measure to improve

Tracking performance is an important part of quality improvement. It can help identify barriers to good practice and potential solutions.

### We only manage what we measure

- First, identify what you want to measure. What are the key indicators?
- Identify the goals for high-quality care for women with high risk of PTB.
- What information do you need to ensure good quality care? Some suggested indicators include:
  - All births with GA by U/S
  - Live births <$34^{+0}$ weeks GA confirmed by U/S.
  - Stillbirths <$34^{+0}$ weeks.
  - Safe ACS use including time to birth after ACS given.
  - Unsafe ACS use or non-use.
- Next, decide how you are going to measure and record the data for your chosen indicators.
- Finally, graph the data to visualize and better understand adherence to care practices.
- Reviewing these and other indicators monthly will help you improve care.

### Data visualization can drive quality improvement

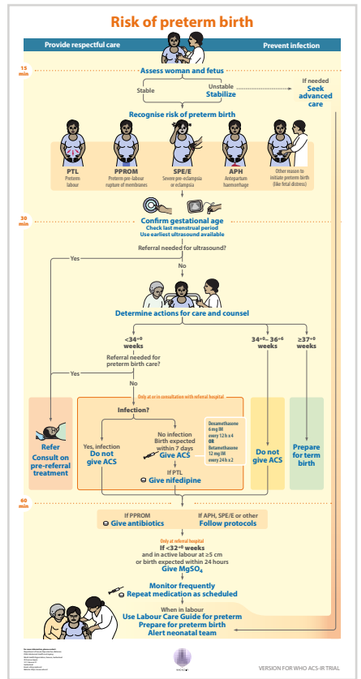
Data visualization plays a key role in promoting understanding and monitoring indicators.

There are various ways to chart the data. For example, dashboards are data-driven evidence-based tools typically used to synthesize data with the aim of assisting with effective decision-making.

Dashboards can be updated periodically and discussed in regular audit and feedback meetings – everyone needs to work together to maintain and improve quality.

### Identify areas needing improvement, select the outcomes you want to change and implement change

- Work with the perinatal team to decide how you will make the change.
- Determine what additional data, if any, will be needed to demonstrate improvement and how and when you will collect them.
- Discuss what resources will be needed to make the change.
- Plan who will look at the data and analyze them.
- Suggest how to share the results of a change with all providers.
- Plan how to maintain change when it occurs and what to do if it does not occur.




## Care if at

# Risk of preterm birth


## Begin with a story

**Imagine a woman having her 3rd baby arrives at 31+4 weeks of gestation with contractions every 3 minute, and her cervix 6 cm dilated. She gives birth 3 hours later.**

**The baby has seizures and respiratory distress, and dies soon after birth.**

Pause, then continue:

**Now imagine the same woman arrives, but you can give ACS, nifedipine and magnesium sulphate ($MgSO_4$).**

**The ACS helps the baby's lungs mature, nifedipine slows the labour so the ACS can work and $MgSO_4$ reduces the risk of seizures in the newborn.**

**You note when each medication is due again, alert neonatal team and now the team is prepared for a preterm baby.**

**The woman gives birth 12 hours later and her baby receives immediate care for a preterm baby.**

**Her baby does not develop respiratory distress or seizures and survives.**

## Explain

- In this course you will gain knowledge and skills to identify women at high risk of preterm birth and care for them, tailored to the facility where you work.
- You will learn:
  - how to estimate and then confirm gestational age
  - how to diagnose the most common conditions leading to PTB.
  - what interventions given before birth can improve survival of a preterm baby.
- The protocols for these interventions and care for women at risk of preterm birth should be posted prominently in your labour ward.

## Continued learning for health workers

- This course is for all health workers who care for women at birth.
- We will use different learning methods:
  - discussions
  - demonstrations
  - hands-on practice
  - case scenarios.
- After the course, short activities at the facility, such as practising cases and review of facility data with peers, will strengthen clinical decision making and improve quality of care.

## Learning materials

- The Action Plan is used for clinical training, practice and as a job aid.
- The Provider Guide is a personal resource for all participants for continued practice after the course. It includes:
  - LDHF activities for quality improvement
  - tools such as medication information and $MgSO_4$ Monitoring Form
  - key knowledge and references.

Referral hospitals ✓ Health centres ✓

# The perinatal team approach


# Explain

## Who is the perinatal team?

The perinatal team includes those who care for the woman or baby before or after birth.

- Team members ideally include:
  - obstetrician
  - paediatrician or neonatologist
  - maternity ward staff, and the matron of the maternity ward
  - neonatal nurses, and neonatal charge nurse
  - facility administrators and pharmacy personnel.
- A designated health worker from health centres can act as focal point for better communication.

## What does the perinatal team do?

- Identify pregnant women at risk of PTB.
- Recommend and give interventions.
- Decide on care to ensure safety of the woman and baby.
- Prepare for and manage PTB as a team.
- Care for the preterm newborn and woman as a pair.

## What is the perinatal team approach?

- Use good communication and collaboration to make care decisions.
- Ensure standard treatment protocols are understood, agreed upon and followed.
- Use team training and review practice cases together.
- Review facility data with health workers to improve care.
- Meet regularly to audit all cases of PTB and provide feedback in order to:
  - Improve practice by identifying problems and solutions through reviewing outcomes, discussing care practices, identifying areas for improvement.
  - Make plans for quality improvement (QI) and track progress towards achieving QI goals.

## Types of communication include

- Perinatal team members at the referral hospital consulting each other on care decisions.
- Health centre consultation with perinatal team at referral hospital when deciding on care for women at risk of PTB.
- Health centre staff documenting care on the referral form to send with women being transferred to the referral hospital.
- Perinatal team documenting on the Feedback form and sending to the health centre.

# Review

- Ask participants to take 5 minutes and review in pairs:
  - The referral form on page 10 of the Provider Guide – to facilitate care at the referral facility.
  - The feedback form on page 11 of the Provider Guide – to help staff at the health centre validate and improve care for women at risk of PTB.

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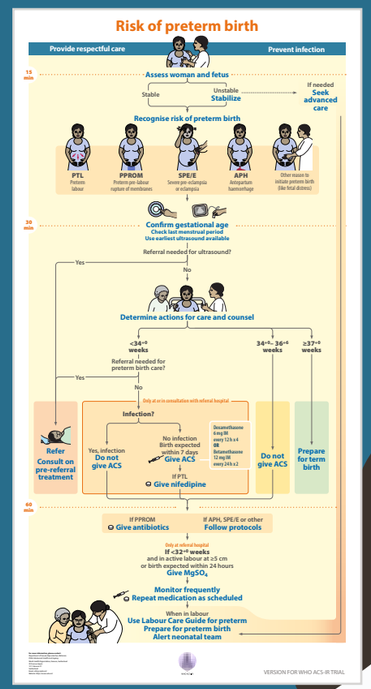
# Provide respectful care
# Prevent infection




# Explain

## Provide respectful care and counselling

- Good relationships begin with respect and trust.
  - Women who feel respected and informed will be better able to make good choices for themselves and their families.
  - Women have the right to make informed decisions about their care, including declining care.
- As you begin your assessments, ask her permission before beginning.
- Let the woman and her family know of your concern that she may be at risk of PTB and that she may need special care.
- Inform them of your findings and options for care.
- Listen to her questions and concerns without interrupting and confirm you understand her.
- Explain early if transfer for advanced care is needed.
- Always be honest:
  - admit if you don't know something
  - maintaining trust matters more than appearing knowledgeable.

## Good counselling

- Is an essential part of respectful care.
- Leads to shared decision-making.
- Improves outcomes, patient satisfaction and a patient's experience of care.
- To enable shared decision-making:
  - Ensure effective communication between health workers and women receiving care.
  - Take into consideration a woman's values, preferences, fears and concerns.
  - Use culturally appropriate language and terminology.
  - Give clear, simple explanations of your findings and their implications.
  - Give clear explanations of all care options.
  - Give unbiased explanation of potential benefits or risks for the woman and her baby.
  - Give ample time for the woman to ask questions.
  - Come to agreement on the plan of care and obtain informed consent.

## Prevent infection

- Good infection prevention practices are especially important in preterm labour and birth to protect premature newborns.
- Handwashing is the single most effective way to prevent infection.
- Digital vaginal examinations should be avoided in women with preterm prelabour ruptured membranes to reduce the risk of infection. Follow protocols.

# Discuss

1. Why is it important to give respectful care and good counselling?
2. How is this similar to or different from what you do now?
3. What do you think about asking patients for their permission before starting care?

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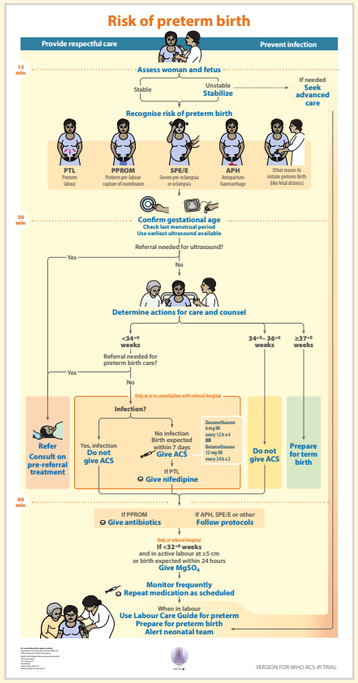
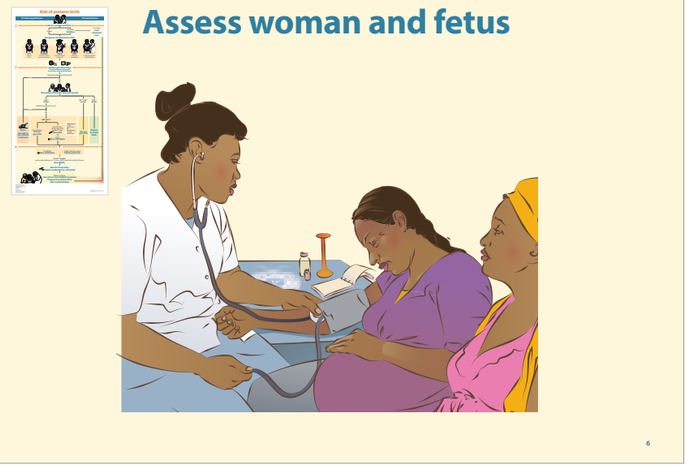
# Assess woman and fetus




### Facilitation note

- Refer participants to the **Checklist for initial assessment of woman and fetus** on page 8 of the Provider Guide.

## Explain

- Do an initial rapid assessment for **all women** with symptoms of preterm labour within **15 minutes of arrival.**
- Ask the woman why she has come and if she has any danger signs:
  - loss of consciousness
  - convulsions
  - difficulty breathing
  - vaginal bleeding
  - abdominal pain
  - headache or visual changes.
- If she is too sick, ask her companion.
- Check antenatal and medical records:
  - to identify whether and how GA has been determined
  - to see whether there are any medical or obstetric complications and how they have been managed.
- Assess:
  - vital signs
  - abdominal examination for: fetal heart rate (FHR), contractions for frequency and duration, scars, fetal presentation and descent
  - sterile speculum examination for: status of membranes, cervical length and dilatation
  - digital vaginal examination (VE) only if labour is established or birth is imminent
  - check for signs of infection – fever, tachycardia, purulent or foul-smelling vaginal discharge, uterine tenderness, fetal tachycardia, signs/symptoms of genital tract infection/UTI.
- If you suspect infection, take cultures of the urine and genital tract.

**Do not perform a digital vaginal examination if:**

- The woman is bleeding, unless placenta praevia has been ruled out and you are in a referral hospital.
- The membranes are ruptured. If there is no bleeding, perform a sterile speculum examination.

## Record findings and decide on care

- Stabilize the woman and fetus if there are any danger signs.
- Manage identified conditions.
- Consider delivery as appropriate.
- If fetal heart tones are absent, stabilize the woman as needed and plan for delivery.
- If the woman and fetus are stable, plan to manage any conditions and confirm GA to identify if the woman is at high risk of PTB and requires intervention.

## Discuss

1. How can a rapid assessment help identify women at risk of preterm birth?
2. Do you currently do a rapid assessment on all women within 15 minutes of their arrival?
3. If not, what could be changed to make that possible?

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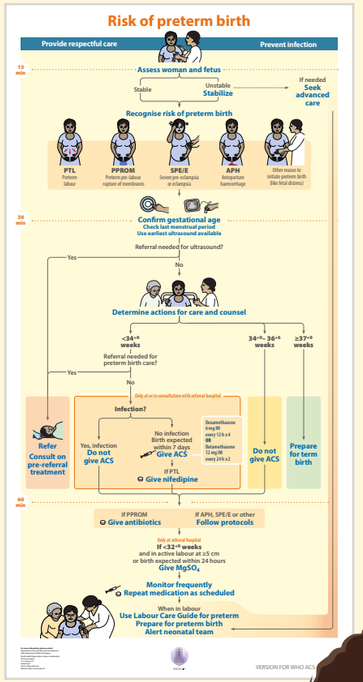


# If unstable

# Stabilize

# If needed

# Seek advanced care


## Facilitation note

Refer participants to the **SBAR template** on page 9 of the Provider Guide.

## Explain

Seek advanced care if the woman or fetus is unstable.

- At referral hospital, advanced care may be a more senior provider.
- At a health centre, activate your referral plan for advanced care.
- Give urgent care to stabilize the woman until she can receive advanced care.
- Provide treatments for identified problems such as:
  - oxygen by mask or cannula
  - IV fluids
  - loading dose of $MgSO_4$ for severe pre-eclampsia/eclampsia
  - antibiotics
  - blood type and cross matching.
- Remember to give emotional support.
- Contact a member of the perinatal team at the referral facility to make decisions about management and facilitate referral.
- Begin your referral plan and complete the referral form.
- Communicate all findings to team members using the SBAR technique – **I will demonstrate it shortly**

## Discuss

- Have you ever used SBAR?

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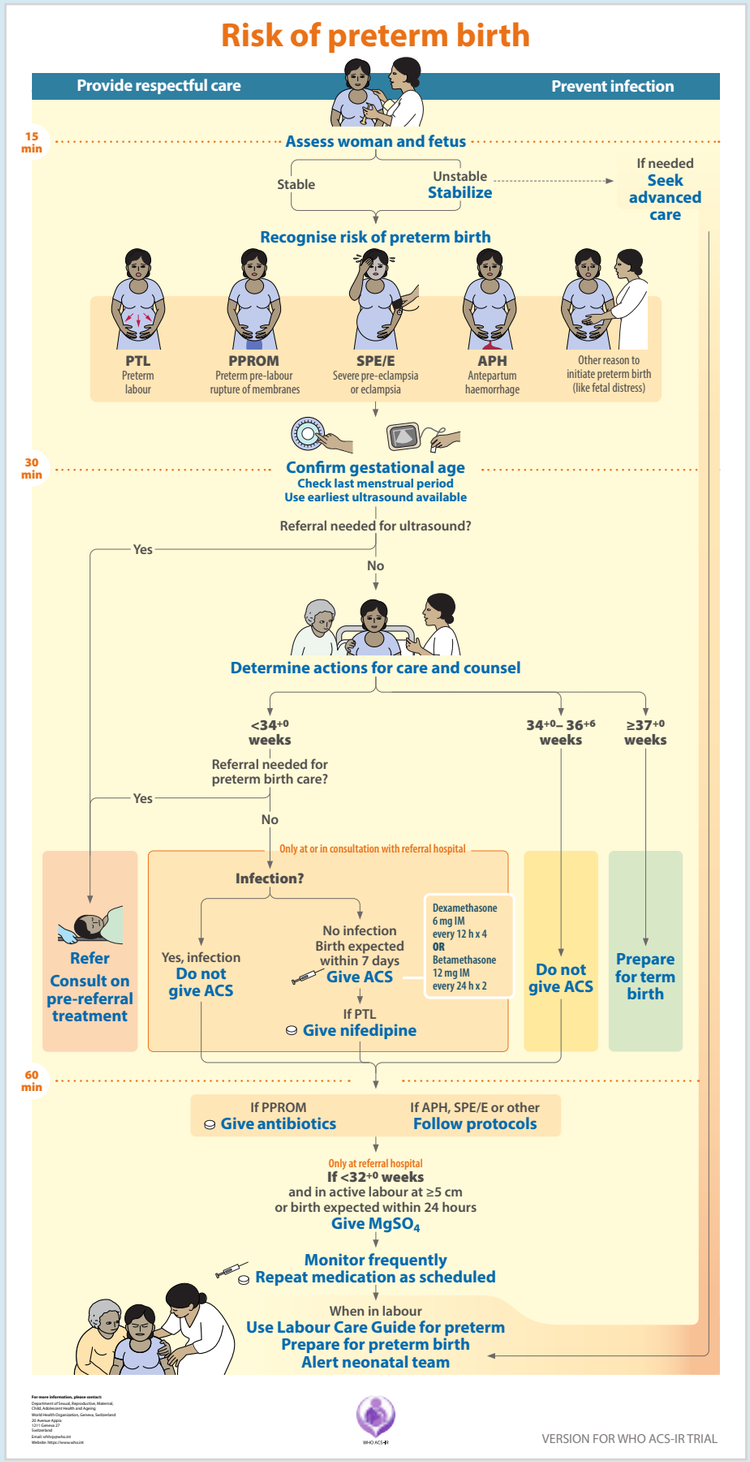


# Activity 1: Initial assessment and SBAR

Activity 1

# Initial assessment

This demonstration is for assessment and communication. Management of conditions will be covered later in the course.

## 1. Prepare

- Refer participants to the Initial assessment checklist on page 8 of the provider guide and SBAR on page 9.
- As the facilitator you will be demostrating in the role of a health worker assessing and communicating a case. Familiarize yourself with the Initial assessment checklist, SBAR tool, and the activity before hand.

## 3. Demonstrate

- Ask a participant to play the role of the woman, following the script in orange on this page.
- The facilitator plays the role of the health worker, following the script in blue.
- Ask the remaining participants follow the actions with the checklist on page 8 of the Provider Guide.

**Go through the script and then discuss**

- Are there danger signs that need urgent care?
- Is there need for advanced care and stabilizing?

## 4. Practice

**Tell participants:**

Now you will role-play in pairs, how you would assess and use SBAR to communicate another case.

**Follow the instructions on for the activiy on page 20 of the Provider Guide.**

You will have 15 minutes to complete the activity.

### Welcome and ask questions

Welcome. My name is _____ and I am your midwife/doctor

I'm Grace Dialo. I'm worried about my baby.

I will do a rapid assessment to see how you and your baby are doing.

Why did you decide to come?

I am bleeding! It started this morning.

You seem afraid. How are you coping?

I'm very worried. I know bleeding is not normal. I'm scared there is something wrong.

Is the baby moving?

Yes. I felt movement on my way here.

Let us see how far along you are. When is your baby due?

My due date is in less than 2 months. I'm about 33 weeks now, I think.

### Check for danger signs

Ok, you have been bleeding since this morning. Tell me, have you ever had convulsions or beeen unconscious?

No, never.

And what about these?

— leaking fluid
— foul smelling vaginal discharge
— fever
— abdominal pain
— headache, blurry vision
— vomiting
— difficulty breathing.

No fever, headaches, my vision is not blurry, no vomiting or trouble breathing. My abdomen hurts a bit.

### Check antenatal and previous medical records

You said you think you are 33 weeks. Have you had an ultrasound.

I have my card here. (Hand over imaginary card)

No, I have not had an ultrasound. I am sure of my last menstrual period though. I was preparing for my mother's birthday.Ok, I see that and (pretend to use a wheel or app) according to your LMP, you are 33 weeks and 2 days today and this is your first pregnancy.

Have you had any issues during your pregnancy or medical problems?

No, I haven't had any medical problems this pregnancy.

### Vital signs, fetal heart rate, obstetric exam

Ok. I will have a look at you and your baby now, is that ok?

Yes, that is ok.

(Check and note down)

— Maternal pulse: 102 beats per minute.
— Temperature: 37.5°C.
— BP: 102/58 mmHg.
— Respirations: 28 breaths per minute.
— Signs of anaemia: No
— Most recent haemoglobin: 10.5 g/L at antenatal visit two weeks ago.
— FHR:132 bpm (listen for a full min).
— Fetal movement: Yes.
— Fundal height: 28 cm.
— Presentation: Head down.
— Uterine tenderness/irritability: slight tenderness on palpation.

Oh, that hurts!

— Contractions: None.
— Leaking amniotic fluid: No but clothes have a moderate amount of bright red blood.
— Ruptured membranes: Does not appear to be but will not do digital exam.

### Communicate and record

Your baby is doing ok right now, but I am worried about your bleeding. It may be a sign of placental abruption which means your placenta is separating from your womb.

You are at risk for preterm birth because of bleeding so we need to get advanced care for you.

I will note all of this down in your record.

— If in a health centre: explain that you will call the referral hospital and she will be transferred.
— If in a referral hospital: explain you will be calling in the perinatal team to come see her.

### SBAR

Use the SBAR tool to communicate with perinatal team at the referral hospital.

**Situation: What's happening now?**

I am (name) from (facility) caring for Mrs. Diallo who came in because she is bleeding.

**Background: What led up to this?**

— She is a 32 year old G1with vital signs: BP 102/58, pulse 102 bpm, respirations 22, temp 37.5, and FHR 132 bpm with no contractions.
— GA is approximately 33 weeks by certain LMP with no ultrasound during this pregnancy.
— Her clothes are blood stained and shehas uterine tenderness.
— We sent blood for hemoglobin andtype/cross-match.
— We are giving oxygen, and started an
— IV with normal saline running at 1L in 1hour.

**Assessment: What do you think is going on?**

She is having an antepartum haemorrhage which may be from placenta l abruption.

**Recommendation: What do you need?**

She may need a CS and care for a preterm newborn. Is there anything you would like me to do until (you arrive OR she arrives at your facility)?

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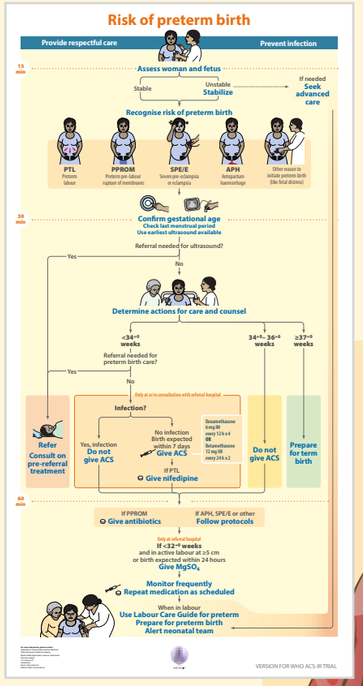
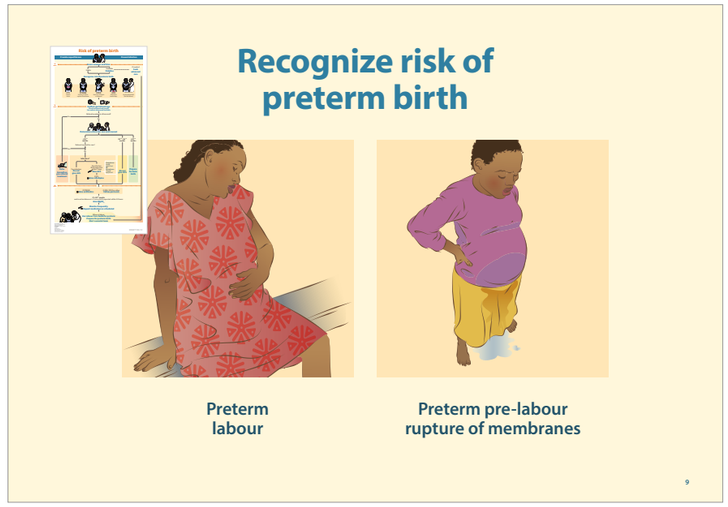
# Recognize risk of preterm birth




**Preterm labour**

**Preterm prelabour rupture of membranes**




# Explain

## Identify risk factors for PTB

If the woman's GA is less than $37^{+0}$, there are 5 categories that put her at risk of PTB:

- Preterm labour.
- Preterm prelabour rupture of membranes.
- Severe pre-eclampsia or eclampsia.
- Antepartum haemorrhage.
- Preterm birth initiated by health workers for other reasons – such as fetal distress.

## Identify when prolonging pregnancy is not safe

- Do not delay delivery if needed for the safety of the woman or fetus:
  - worsening or unstable severe pre-eclampsia/eclampsia
  - maternal haemorrhage
  - chorioamnionitis
  - fetal demise
  - non-reassuring maternal and/or fetal status.

## Preterm labour

Onset of regular contractions resulting in cervical changes before 37 completed weeks of gestation.

### Symptoms

- Painful contractions.
- Cramping, pelvic pressure, low backache.
- Vaginal discharge of mucus, which may be clear, pink or slightly bloody (i.e., mucus plug, bloody show).

### Identify signs

- At least 6 regular uterine contractions per hour, **and**
- At least one of the following:
  - cervical dilation ≥3 cm
  - effacement ≥75%.

## Preterm prelabour rupture of membranes

Rupture of membranes after viability and before 37-weeks' gestation without labour. Most women with PPROM deliver within 1 week.

### Symptoms

- Sudden gush of fluid and/or continued leaking.

### Identify signs

- Typical odor and color of amniotic fluid.
- Under a sterile speculum examination:
  - Pooling of fluid in the posterior fornix.
  - Leaking from the cervical os.
  - If amniotic fluid not seen in the back of the vagina, ask the woman to push on her fundus, perform Valsalva maneuver or cough.
- Alkaline pH of the fluid at the perineum or on sterile speculum examination per nitrazine test – nitrazine paper turns blue with amniotic fluid.
- Exclude urinary incontinence.

# Ask

1. Do you have nitrazine paper to check for ruptured membranes?
2. Under what conditions should you not delay delivery?
   — Encourage 5 answers from column 1 and 2.

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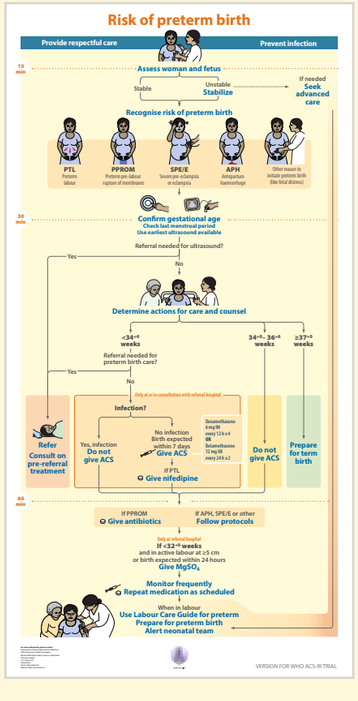
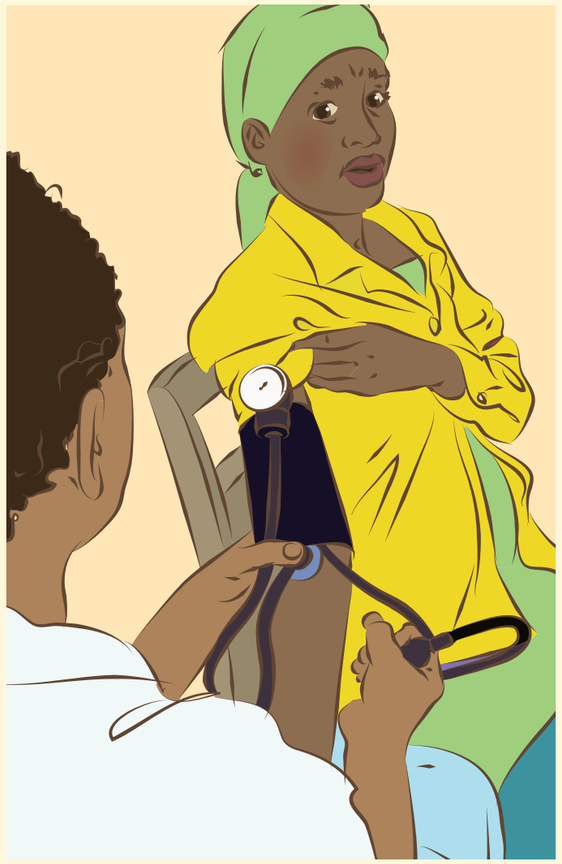



# Recognize risk of preterm birth



## Severe pre-eclampsia or eclampsia

## Recognize risk of preterm birth

Severe pre-eclampsia or eclampsia

10

# Explain

## Severe pre-eclampsia

- New-onset hypertension with proteinuria or organ dysfunction – at 20 weeks or more.
- Eclampsia: seizures in someone with PE.

### Symptoms

- Visual disturbances.
- Right upper quadrant pain or epigastric pain.
- Shortness of breath.
- Nausea and vomiting.

### Identify signs

- SBP ≥140 mmHg or DBP ≥90 mmHg.

**and**

- Proteinuria:
  - ≥2+ on dipstick or
  - ≥0.3 g in 24 urine collection.

**and**

- At least one danger sign:
  - BP ≥160/110 mmHg – either parameter.
  - Pulmonary edema – crackles on auscultation.
  - Oliguria – passing <400 mL urine in 24 hours.
  - Hyperreflexia or clonus.
  - Thrombocytopenia – platelet count less than 100,000/µL.
  - Liver enzymes (transaminases) more than twice the normal range.
  - Serum creatinine – higher than 1.1 mg/dL **or** a doubling or more of baseline serum creatinine.

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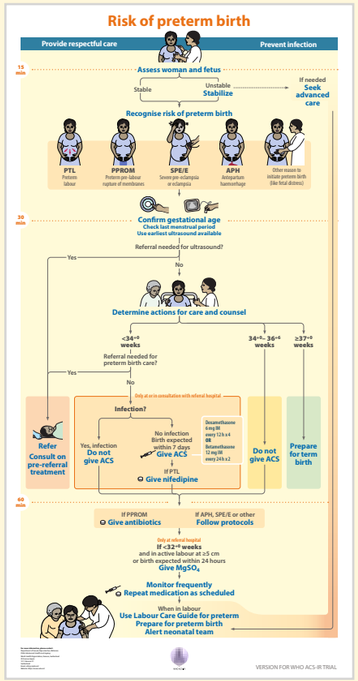
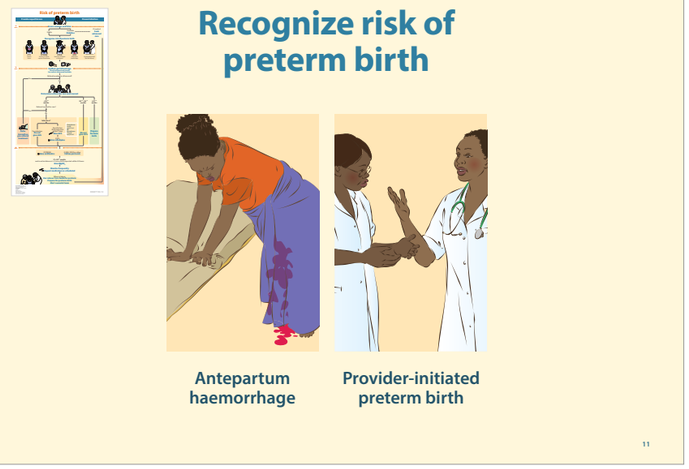



# Recognize risk of preterm birth

Antepartum haemorrhage

Provider-initiated preterm birth




# Explain

## Antepartum haemorrhage (APH)

- Vaginal bleeding before birth
- Due to placenta praevia, placental abruption, ruptured uterus or trauma.

### Symptoms

- Vaginal bleeding more than "bloody show" or spotting.
- Intermittent or constant abdominal pain – rule out placental abruption or ruptured uterus.
- Recurrent painless bleeding, bleeding caused by intercourse – rule out placenta praevia.
- History of recent trauma.

### Identify signs

- Uterine tenderness.
- Fetal malpresentation (placenta previa).
- Immediate cessation of any uterine contractions, fetal parts palpable abdominally (ruptured uterus).
- Signs of fetal distress or fetal demise.
- Shock: fast, weak pulse (>110/min); low blood pressure (systolic <90 mmHg).

## Other provider-initiated preterm birth

- Additional medical conditions that require induction or caesarean birth:
  - signs of fetal compromise
  - intrauterine growth restriction
  - oligohydramnios
  - trauma
  - uncontrolled hypertension
  - other causes determined by perinatal team.

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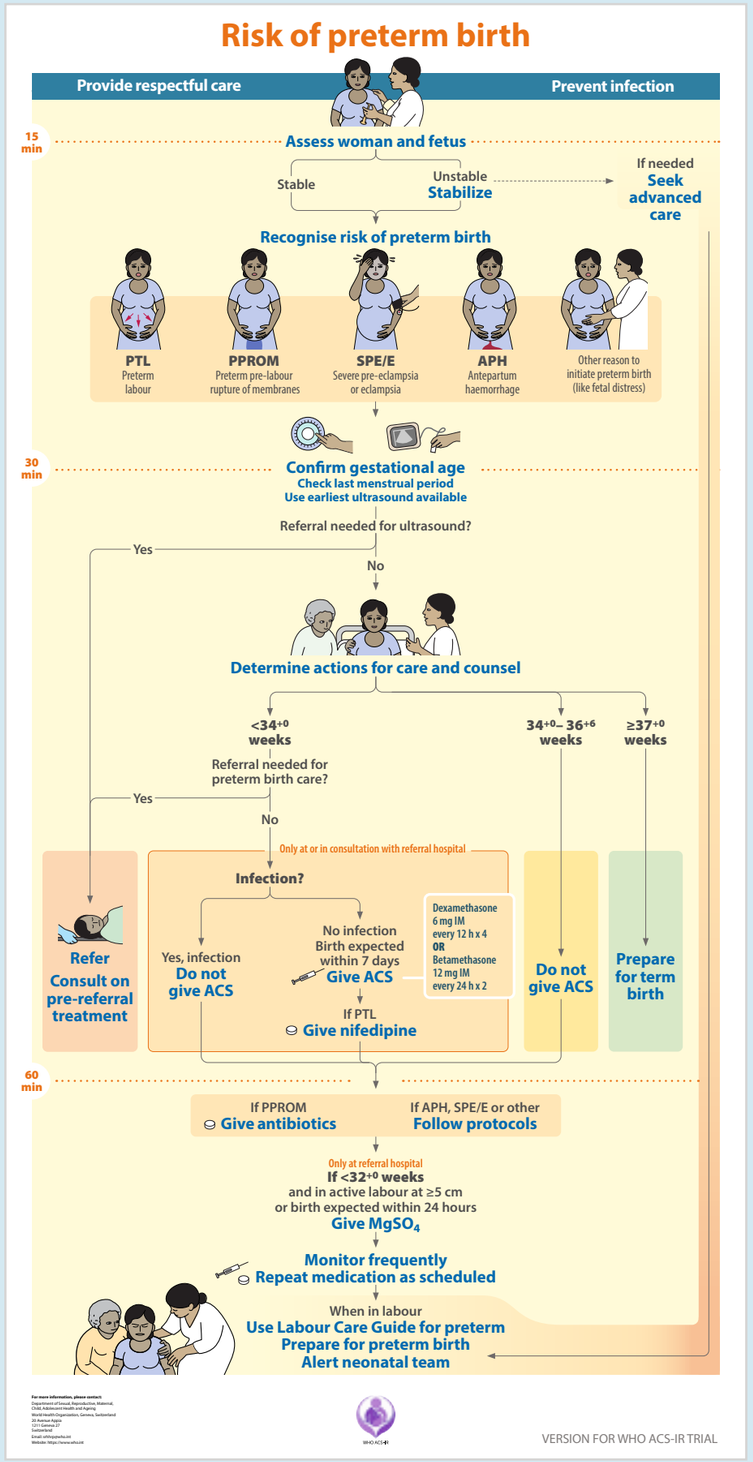


# Activity 2: Recognize risk of preterm birth

**For each case move to either side of the room to indicate your answer**

**YES**

**NO**

Activity 2

# Recognize risk of preterm birth

## 1. Prepare the room

- Designate one side of the room as "YES – this is a risk of preterm birth".
- Designate the other side as "NO – this is **not** a risk of preterm birth".
- Keep the middle of the room clear for movement.

## 2. Instructions

**Tell participants:**

> "I'm going to read a series of cases. After each case, I want you to move to the side of the room that represents your answer:
>
> Move to the YES side if you think this woman has a risk of preterm birth.
>
> Move to the NO side if you think this woman is not at risk.

### Read each of the cases

Once the participants have chosen a side, ask questions for discussion.

### Discuss

- Encourage discussion between participants before they move to the next case.
- Ask those who chose differently to explain their reasoning.
- Highlight key diagnostic features that distinguish true risks.
- Emphasize the importance of systematic assessment rather than jumping to conclusions.

### Case 1

> Sadia is a 27-year-old woman, G2P1, at approximately 30 weeks gestation. She arrives at the health centre reporting cramping and pelvic pressure for the past 4 hours. On examination, she is having 12 contractions per hour. Sterile speculum examination reveals 3 cm dilation and 80% effacement which is confirmed by cervical examination. Her membranes are intact. She has no vaginal bleeding, no fever, and no signs of SPE/E.

- Ask NO side: "Why did you think she was not at risk?"
- Ask YES side: "Why did you think she was at risk?"
- When identified, point at the correct risk in the Action Plan.

—Risk = Preterm labour (≥ 3 cm and ≥ 75% effaced).

### Case 2

> A 32-year-old woman at 34 weeks gestation arrives reporting she felt wetness 2 hours ago with continued dampness. She denies contractions or pain. On speculum examination, you observe clear fluid pooling in the posterior fornix and the nitrazine test turns blue.

- Ask NO side: "Why did you think she was not at risk?"
- Ask YES side: "Why did you think she was at risk?"
- When identified, point at the correct risk in the Action Plan.

—Risk = PPROM.

### Case 3

> A 26-year-old woman at 29 weeks gestation reports feeling "wet down there" every time she coughs since this morning. On speculum exam, there is no fluid in the vagina. Discharge collected on a cotton swab does not change the nitrazine paper from yellow.

- Ask NO side: "Why did you think she was not at risk?"
- Ask YES side: "Why did you think she was at risk?"
- Clarify this is not a risk.

—Urinary incontinence (negative nitrazine test).

### Case 4

> A 25-year-old woman at 33 weeks gestation presents with severe headache and blurred vision. Her BP is 170/115 mmHg. Urine dipstick shows 3+ protein.

- Ask NO side: "Why did you think she was not at risk?"
- Ask YES side: "Why did you think she was at risk?"
- When identified, point at the correct risk in the Action Plan.

—Risk = Severe Pre-eclampsia.

### Case 5

> A 30-year-old woman at 32 weeks gestation arrives with vaginal bleeding that started about 2 hours ago. She says she has no pain and that this is the third episode this week. She also says bleeding occurred after intercourse yesterday. The baby is in breech presentation on palpation.

- Ask NO side: "Why did you think she was not at risk?"
- Ask YES side: "Why did you think she was at risk?"
- When identified, point at the correct risk in the Action Plan.

—Risk = Antepartum haemorrhage (likely placenta praevia).

### Case 6

> A 29-year-old woman at 34 weeks gestation comes in worried about cramping she's been feeling. On examination, she is having 4 contractions per hour. Cervical exam shows 1 cm dilation, 30% effacement, cervix is firm and posterior.

- Ask NO side: "Why did you think she was not at risk?"
- Ask YES side: "Why did you think she was at risk?"
- Clarify this is not a risk.

—False labour contractions (no cervical change, fewer than 6 contractions per hour, cervix 1 cm).

### Case 7

> A 27-year-old woman at 34 weeks gestation comes in with vaginal bleeding and severe, constant abdominal pain that started after a motor vehicle accident 1 hour ago. Her uterus feels tender and firm on palpation. Fetal heart rate is 144 bpm.

- Ask NO side: "Why did you think she was not at risk?"
- Ask YES side: "Why did you think she was at risk?"
- When identified, point at the correct risk in the Action Plan.

—Risk = Antepartum haemorrhage (likely placental abruption from trauma).

### Case 8

> A 31-year-old woman at 33 weeks gestation presents with swelling of her feet. BP is 145/95 mmHg. She has no visual disturbances, no epigastric pain, and no other symptoms. Urine protein is trace. Reflexes are normal. Blood tests show normal platelets and liver enzymes.

- Ask NO side: "Why did you think she was not at risk?"
- Ask YES side: "Why did you think she was at risk?"
- Clarify this is not a risk.

—Mild gestational hypertension, BP not in severe range (not >160/110), no organ dysfunction, only trace protein, no severe features.

### Case 9

> A 27-year-old woman at 30 weeks gestation with her first pregnancy reports strong cramps since this morning. She says her abdomen is "getting hard every few min". Cervical examination reveals a cervix that is 5 cm dilated and 80% effaced.

- Ask NO side: "Why did you think she was not at risk?"
- Ask YES side: "Why did you think she was at risk?"
- When identified, point at the correct risk in the Action Plan.

—Risk = Preterm labour (≥ 3cm and ≥75% effaced).

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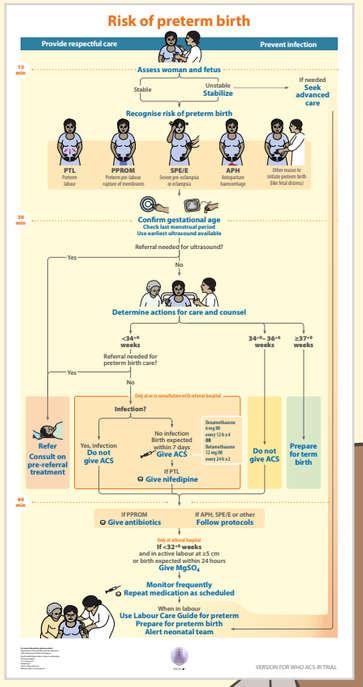
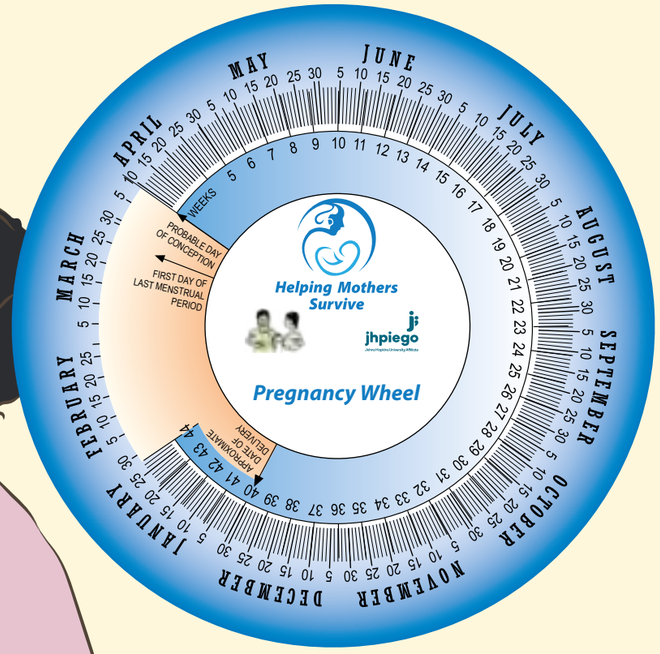
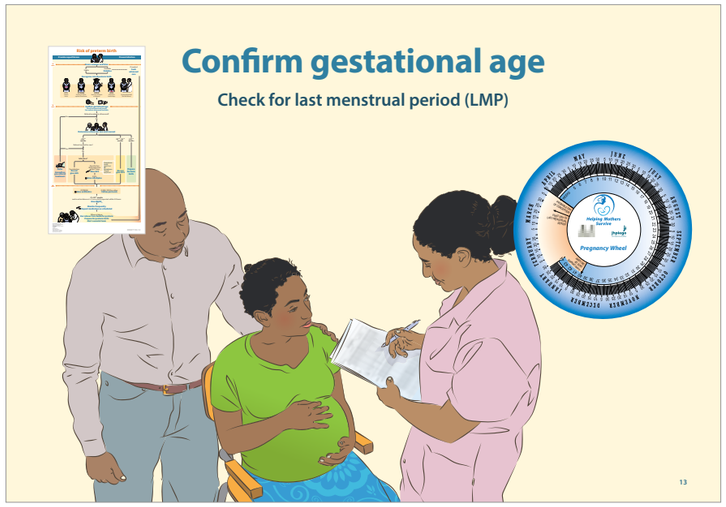
# Confirm gestational age

## Check for last menstrual period (LMP)






# Explain

## Gestational age (GA) guides care decisions

- At every contact with the woman, confirm GA – ask about last menstrual period (LMP), calculate due date, determine GA today and make a plan for care.
- For all women and especially those at risk of PTB, GA must be confirmed by ultrasound (U/S).
- Use an existing U/S if available – if not, arrange one now.

### Why GA matters

- GA determines which interventions to offer.
- ACS can increase perinatal mortality if given at the wrong GA.
- $MgSO_4$ after $32^{+0}$ weeks does not improve outcomes but side effects to the woman remain.

### Viability threshold

- Viability is context-dependent: generally fetuses with GA $24^{+0}$ to $28^{+0}$ weeks or more are considered viable.
- Below viability, follow local protocols.

## Determine GA by last menstrual period (LMP):

- Review her record and ask: what was the first day of her LMP?
- An LMP **is reliable** if all of the following are true:
  - She is certain of the date of the first day of her LMP.
  - She has had a regular 24–32 day cycle for at least 6 months before pregnancy.
  - Before her LMP she was not on:
    - contraceptive pills for at least 3 months **or**
    - injectable hormonal contraception for at least 6 months.
- **Special case:** if she conceived using assisted reproductive technology, use that information to establish the estimated date of delivery (EDD).

If her LMP is not reliable **do not use it to determine GA.**

## Do not use fundal height (FH) to assess GA

- FH in cm tracks fetal growth over time.
- From about 20–36 weeks, each cm roughly equals weeks of pregnancy (±2 cm).

### FH is not reliable for establishing GA

- The FH may measure **large** in cases of:
  - obesity
  - multiple pregnancy
  - fibroids
  - polyhydramnios.
- The FH may measure **small** in cases of:
  - small woman
  - strong abdominal muscles
  - oligohydramnios
  - transverse lie
  - fetus engaged
  - fetal growth restriction.
- Individual health workers' skill and experience also make findings more variable and less accurate.

**Never** give ACS based on LMP or FH alone.

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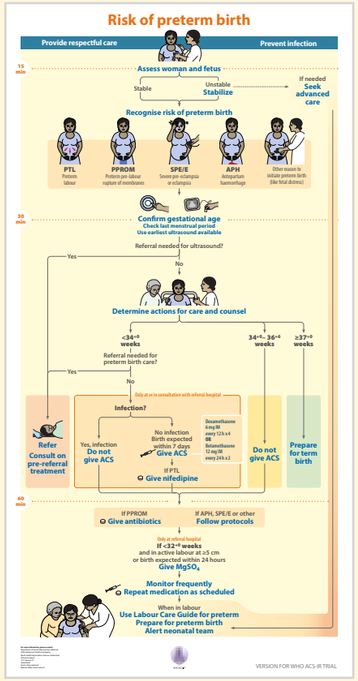



# Confirm gestational age

## Use earliest ultrasound available

### Risk of preterm birth

### Gestational age job aid

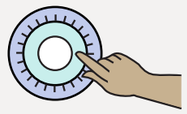
#### Review ultrasound dating

**Dating U/S available?**

**Not available**
**Ensure U/S is done**

**Available**
**Use the earliest U/S**
Do not re-date with later U/S

**Compare U/S and LMP dates**



**LMP certain?**

**Not certain**

**Certain**
**Compare LMP and U/S**

**Not aligned**

**Aligned**

**Use U/S dating to confirm GA**

**Use LMP dating to confirm GA**

Regardless of trimester

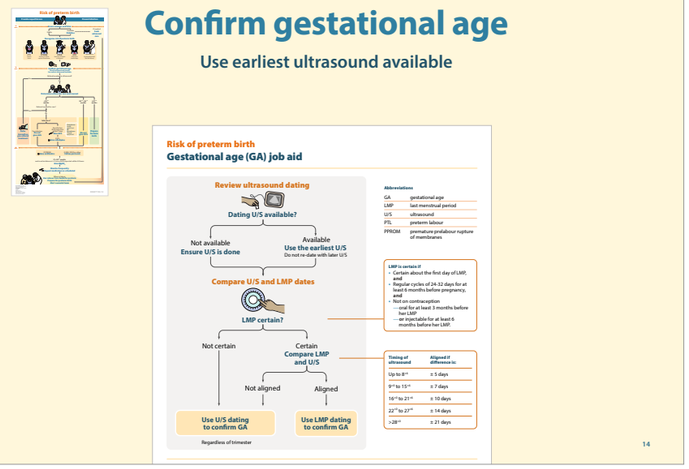
**Abbreviations**

| | |
|---|---|
| GA | gestational age |
| LMP | last menstrual period |
| U/S | ultrasound |
| PTL | preterm labour |
| PPROM | premature prelabour rupture of membranes |

**LMP is certain if**

- Certain about the first day of LMP, **and**
- Regular cycles of 24–32 days for at least 6 months before pregnancy, **and**
- Not on contraception:
  - —oral for at least 3 months before her LMP **or**
  - —injectable for at least 6 months before her LMP.

| Timing of ultrasound | Aligned if difference is: |
|---|---|
| Up to $8^{+6}$ | ± 5 days |
| $9^{+0}$ to $15^{+6}$ | ± 7 days |
| $16^{+0}$ to $21^{+6}$ | ± 10 days |
| $22^{+0}$ to $27^{+6}$ | ± 14 days |
| $>28^{+0}$ | ± 21 days |




## Facilitation note

When you explain how to confirm the GA, use the GA job aid to guide your review. See page 7 in the Provider Guide, or print as separate sheets.

## Explain

- You will now learn how to confirm the GA.
- Use the GA job aid on page 7 in the Provider Guide.

### Review U/S

- Always use the earliest ultrasound of sufficient quality:
  - done by a qualified provider
  - with all required fetal measurements reported.
- When two ultrasounds exist:
  - Do not change the date or "re-date" the pregnancy based on the later U/S.
  - If there is a significant discrepancy between the two – seek a second opinion from a senior ultrasonographer and senior obstetrician together.

### If earlier U/S dating not available

- Estimate GA by LMP and refer for U/S as soon as possible to confirm.

## Compare U/S and LMP dates to confirm GA

### LMP is not reliable

- Determine GA by U/S regardless of trimester.

### When LMP is reliable and U/S available

- Compare LMP and U/S dates:
  - If aligned, use the LMP dating to confirm GA.
  - If not aligned, use the U/S dating to confirm GA.

> **Note on 3rd trimester U/S**
> A single estimated fetal weight (EFW) cannot distinguish prematurity from intrauterine growth restriction (IUGR). If clinically feasible, repeat ultrasound in 2–3 weeks. If fetal weight gain is absent or inadequate, refer to a CEmONC facility.

### U/S and LMP are considered aligned if:

| Timing of ultrasound | Aligned if difference is: |
|---|---|
| Up to $8^{+6}$ | ±5 days |
| $9^{+0}$ to $15^{+6}$ | ±7 days |
| $16^{+0}$ to $21^{+6}$ | ±10 days |
| $22^{+0}$ to $27^{+6}$ | ±14 days |
| $>28^{+0}$ | ±21 days |

## Discuss

1. What percentage of pregnant women in your facility have an U/S during ANC that dates their pregnancy?
2. How do you use fundal height during pregnancy?
3. If you use fundal height for dating pregnancies, what can you do to stop this practice?

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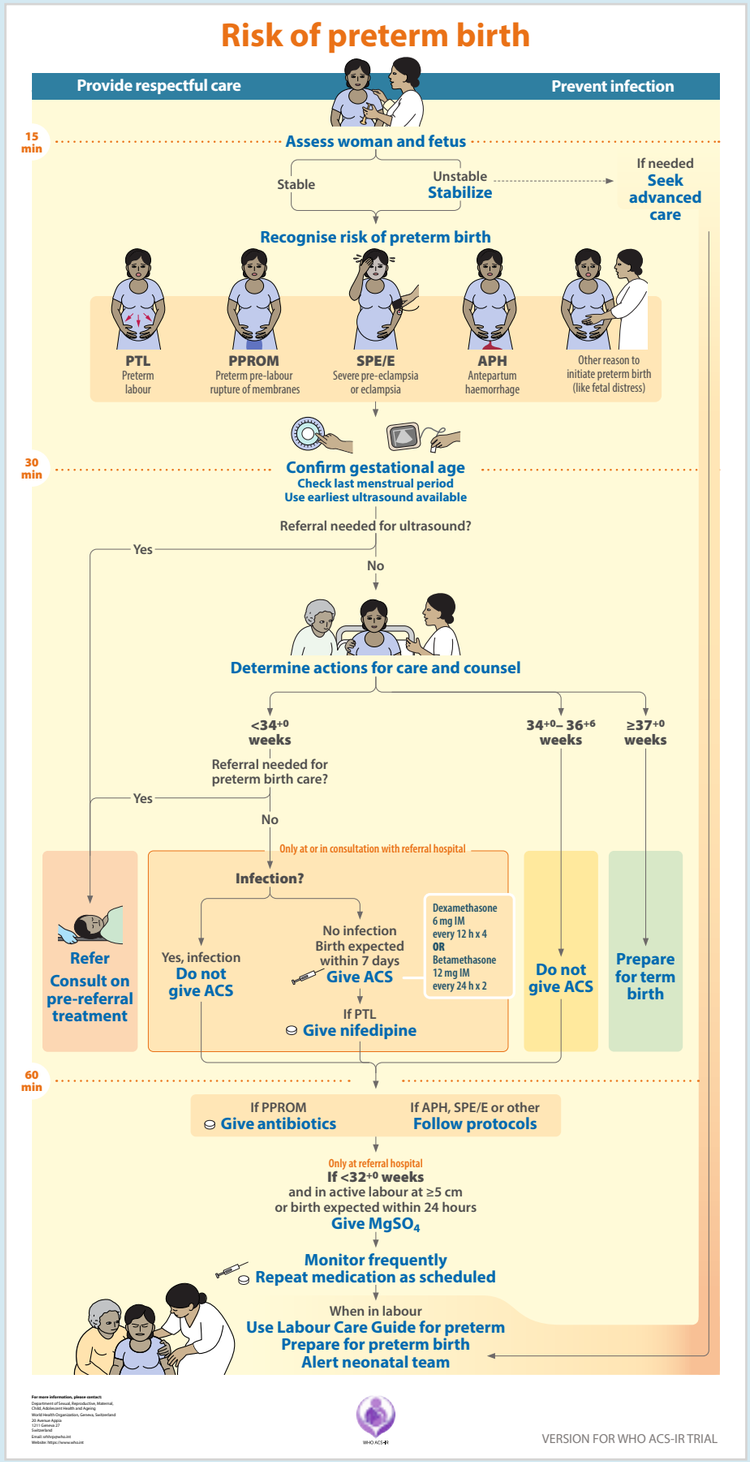


# Activity 3: Confirming the gestational age

## For each case

- Dating U/S available?
- LMP reliable?
- Calculate expected due date GA today by LMP and U/S.
- If LMP is reliable and U/S available
  - GA on day U/S was done?
  - difference between LMP and U/S dating?
  - U/S and LMP dating align?
- Will you confirm the GA based on LMP or U/S dates? Why?

Activity 3

# Confirming the gestational age

## 1. Prepare

- Ensure all participants have:
  - GA wheel, calendar and/or relevant GA app.
  - GA job aid (page 7 in the provider guide)
- Refer participants to page 21 in the Provider Guide where they will find these cases, but without answers.

## 2. Instructions

**If learners are not skilled at use of GA wheel.**

Demonstrate while participants follow.

- Choose a date roughly 6 months ago as the LMP.
- Calculate estimated date of delivery (EDD).
- Calculate GA today.

**Tell participants:**

> We're going to practice confirming gestational age using the criteria you've learned. First, we will work through one case as a group so everyone understands the process. Then you will work in pairs or groups of 2–3 to discuss and answer the remaining cases.
>
> **For all cases**
>
> — Use April 15, 2023 as today's date.
> — Assess if LMP is reliable.
> — Calculate the due date and GA based on LMP.
> — Calculate the due date and GA based on ultrasound (when available).
> — Decide which dating method to use and explain why.

| | | **Case 1 – Demonstration with the whole group**<br>Sadia's first day of her LMP was September 15, 2022. She is certain of this date, as it was the day her eldest child started school. She has never used hormonal contraception and has regular 28-day cycles. She had an ultrasound on December 20, 2022, which showed $13^{+5}$ weeks GA. | **Case 2**<br>Maria's first day of her LMP was August 5, 2022. She is certain of this date. She has regular 30-day cycles and has not used any hormonal contraception for over a year.<br>She had an ultrasound on March 16, 2023, which showed $28^{+2}$ weeks GA. | **Case 3**<br>Fatima's LMP was sometime in early August 2022 but cannot remember the exact date. Her cycles were 25 to 40 days.<br>She stopped all contraception 8 months before she got pregnant. | **Case 4**<br>Lena is guessing the first day of her LMP was Oct 6, 2022 but she is not certain. She has regular 28-day cycles and stopped taking oral contraceptive pills 6 months before her LMP.<br>She has not had an ultrasound during this pregnancy. |
|---|---|---|---|---|---|
| Dating U/S available? | | Yes, earlier U/S available. | Yes, earlier U/S available. | No, earlier U/S not available U/S done today. | No, earlier U/S not available U/S done today. |
| Sure about LMP date? | | Yes | Yes | No | No |
| Regular cycles? | | Yes (28 days) | Yes (30-days) | No (25-40 days) | Yes (28-days) |
| Off contraception long enough? | | Yes (never used) | Yes (over a year before LMP) | Yes (6 months before LMP) | Yes (6 months before LMP) |
| LMP reliable? | | Yes | Yes | No | No |
| LMP expected due date and GA today? | | EDD: June 22, 2023<br>GA today: $30^{+2}$ weeks | EDD: May 12, 2023<br>GA today: $36^{+1}$ weeks | Cannot calculate accurately – LMP uncertain | EDD: July 13, 2023<br>GA today: $27^{+2}$ weeks |
| U/S expected due date and GA today? | | EDD: June 24, 2023<br>GA today: $30^{+0}$ weeks | EDD: June 6, 2023<br>GA today: $32^{+5}$ weeks | EDD: May 8, 2023<br>GA today: 36 $^{+5}$ weeks | EDD: July 1, 2023<br>GA today: $29^{+0}$ weeks |
| **If LMP is reliable and U/S available** | GA on day U/S was done? | $13^{+5}$ weeks | $23^{+2}$ weeks | LMP not reliable | LMP not reliable |
| | Difference between LMP and U/S dating? | 2 days | 25 days | LMP not reliable | 11 days and LMP not reliable |
| | U/S and LMP dating align? | Yes. At 13 weeks, acceptable difference is ±7 days. | No. At $28^{+2}$ weeks 25 days would **not** be aligned (it needs to be less than 21). | LMP not reliable. | Not relevant as LMP is not reliable. |
| Will you confirm the GA based on LMP or U/S dates? | | Use LMP dating. | Use U/S dating. | Use U/S dating. | Use U/S dating. If you could not get U/S today, use LMP for now and refer for U/S dating. |
| Why? | | LMP is reliable and the difference is within acceptable limits for alignment. | LMP is reliable but U/S and LMP dates do not align. | LMP is not reliable | LMP is not reliable. U/S required before giving ACS or other interventions for risk of PTB. |

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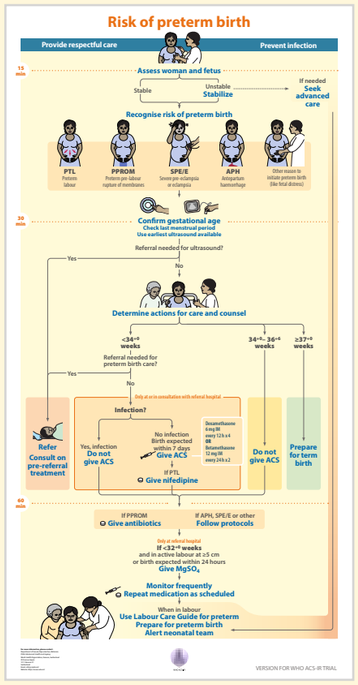



## Based on GA confirmed by ultrasound

# Determine actions for care and counsel

Viability – depending on local context

**24+0–28+0 weeks**

**32+0 weeks**

**34+0 weeks**

**37+0 weeks**

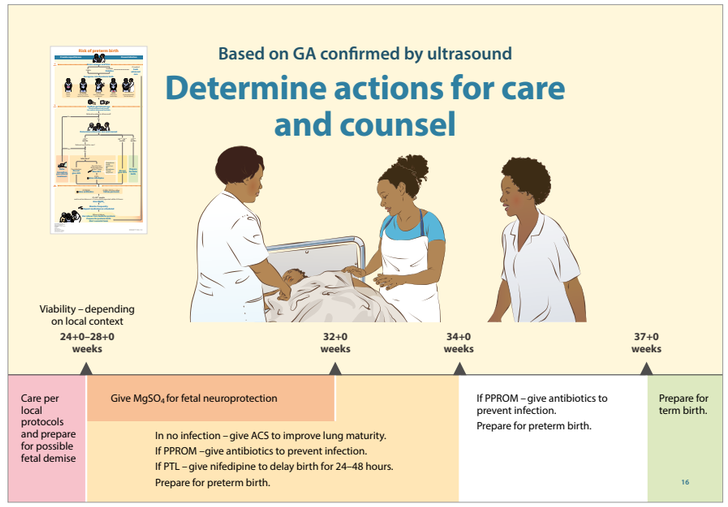
Care per local protocols and prepare for possible fetal demise

Give $MgSO_4$ for fetal neuroprotection

In no infection – give ACS to improve lung maturity.
If PPROM – give antibiotics to prevent infection.
If PTL – give nifedipine to delay birth for 24–48 hours.
Prepare for preterm birth.

If PPROM – give antibiotics to prevent infection.
Prepare for preterm birth.

Prepare for term birth.




# Explain

## Full term or previable

- If **GA ≥37$^{+0}$ weeks**, manage as a term labour and birth.
- If **previable** (confirmed GA less than 24$^{+0}$– 28$^{+0}$ weeks depending on local context) include the woman's information in the trial register and follow local protocols for care.

## ≤36$^{+6}$ weeks and birth expected within 7 days

### Give the right treatments.

We will review these in detail shortly:

- **ACS** (dexamethasone or betamethasone) for fetal lung maturity
- **Tocolytics** (nifedipine) to slow labour and allow the ACS to work
- **Antibiotics** for PPROM to help prevent infection
- **$MgSO_4$** for fetal neuroprotection

> **Do not use these treatments for women at general risk of PTB** such as multiple gestation or prior history of PTB.

## Give care at the right facility

- Most women at risk of PTB are very high risk and should be hospitalized.
- Discharging them requires senior review and careful follow up. Follow local protocols.
- If the GA is <34$^{+0}$ weeks, the woman must be cared for at a referral hospital that can:
  - Accurately determine gestational age confirmed by U/S.
  - Recognize or rule-out maternal infection.
  - Recognize and safely manage preterm labour and birth.
  - Provide a neonatal intensive care unit (NICU) for newborns including
    - resuscitation
    - kangaroo mother care
    - thermal care
    - feeding support
    - infection treatment
    - monitoring for hypoglycemia
    - respiratory support including CPAP

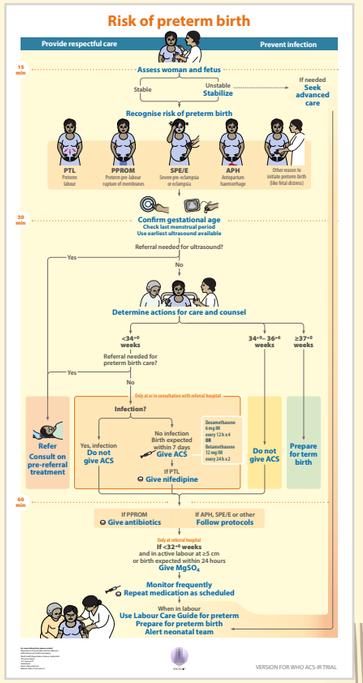
> Premature babies born in facilities without the capacity for small and sick newborn care may suffer preventable complications and may not survive.

## Counsel

- Regardless of a woman's GA, she should make informed decisions about her care.
- We will practice counselling women on what to expect, after we have reviewed the interventions.

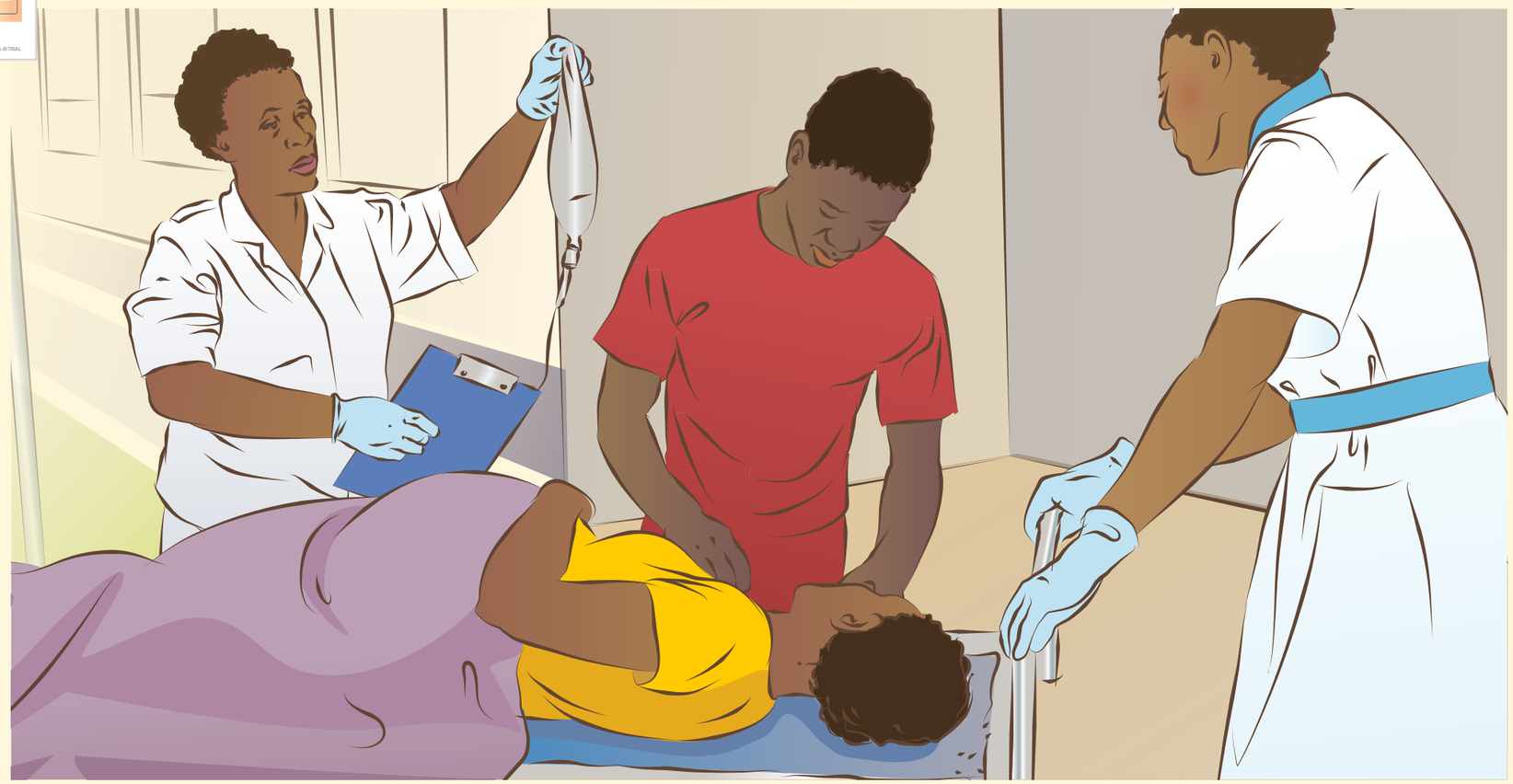
> **Remember, do not delay delivery if needed for the safety of the woman or fetus:**
>
> - worsening or unstable severe pre-eclampsia/eclampsia
> - antepartum haemorrhage
> - chorioamnionitis
> - fetal demise
> - nonreassuring maternal and/or fetal status.

Referral hospitals ✓ Health centres ✓




## If referral needed for ultrasound or care

# Refer
# Consult on pre-referral treatment




# Explain

## Two reasons to refer

- If unable to confirm GA with ultrasound, **or**
- If GA is <34$^{+0}$ confirmed by U/S but you cannot:
  - monitor high risk women
  - do CS 24/7, **or**
  - do not have a neonatal intensive care unit (NICU) on site.

If you cannot confirm GA by U/S, refer for U/S quickly.

## If you need to refer

- Consult the perinatal team at the referral hospital before transport to:
  - consult on treatments for the woman
  - help them prepare for her arrival.

## Pre-referral treatment

The perinatal team at the referral hospital may advise you to begin some of the interventions that we are about to review, if the woman meets criteria and it is safe to continue the pregnancy.

> **Good communication** between staff at the health centre and the perinatal team at the referral hospital is vital.

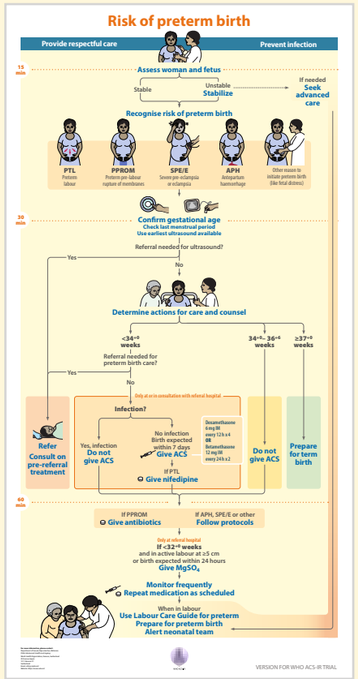
## Considerations for referral

- Document all care in the client record, complete the referral form and send with the woman.
- If a woman is in preterm labour, transport only if:
  - confident she will reach the referral hospital before birth, **and**
  - no intensive monitoring is needed during transport, **and**
  - perinatal team agrees.
- Take into account parity, cervical dilatation, haemodynamic stability, fetal status and logistics.
- If she is too advanced in labour to transport, contact the perinatal team at the referral facility for advice and transport the woman and premature newborn skin-to-skin when stable.

# Ask – health centre only

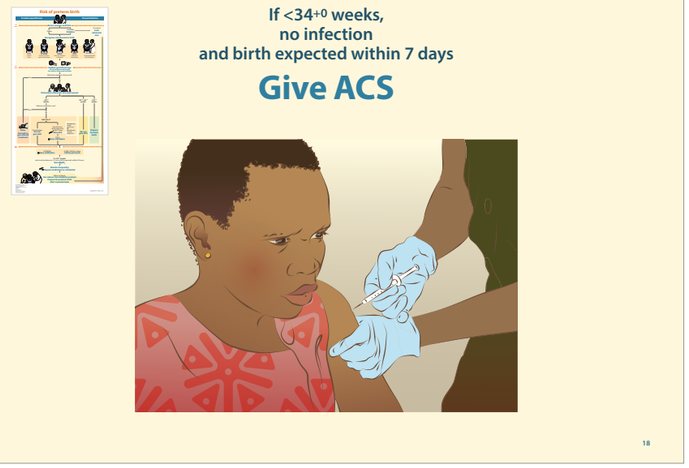
1. What should you send with a woman you are referring?
   - Referral form with clinical findings, gestational age, medications given with times and doses, observations recorded.
2. When must you consult the perinatal team at the referral facility? Name three moments.
   - When preterm labour is first identified, if you need to refer, and when birth is imminent.

Referral hospitals ✓ Health centres ✓




# If <34+0 weeks, no infection and birth expected within 7 days

# Give ACS




# Explain

## Why give antenatal corticosteroids or ACS?

- When given correctly and has time to work, ACS:
  - helps fetal lungs mature
  - protects the intestines and the blood vessels in the fetal brain
  - reduces death in preterm by 22%.

## Only give ACS if

- GA is <34+0 weeks confirmed by U/S **and**
- There is high risk of PTB within 7 days **and**
- Infection can be ruled out.

> If you are at a health centre, **never** give ACS unless it is approved by the referral hospital first.

## Regimen

- Give either:
  - dexamethasone 6 mg IM every 12 hours x 4 doses, **or**
  - betamethasone 12 mg IM every 24 hours x 2 doses.
- Peaks at 48 hours after the first dose and lasts 7 days.
- A single repeat course recommended if:
  - birth does not occur within 7 days of the first course
  - high risk of birth in the next 7 days
  - GA is still <34+0 weeks
  - maternal infection still ruled out.
- Never give more than two courses. This can be harmful to the fetus.
- Ideally, if the woman meets criteria for ACS, give within 60 minutes.
- Document.

> **Misuse of ACS may lead to serious outcomes** including increased neonatal deaths.

## Risks

ACS may increase the risk of:

- Maternal sepsis if given to women with chorioamnionitis or a systemic infection.
- Neonatal mortality if ≥37 weeks GA.
- High blood glucose in women with pre-existing or gestational diabetes.

## Special considerations

- Women can still receive ACS even if they have:
  - multiple pregnancy
  - hypertension
  - PPROM
  - fetal growth restriction
  - chronic conditions requiring steroids
  - diabetes or gestational diabetes
    - closely monitor blood glucose and
    - adjust insulin as needed.

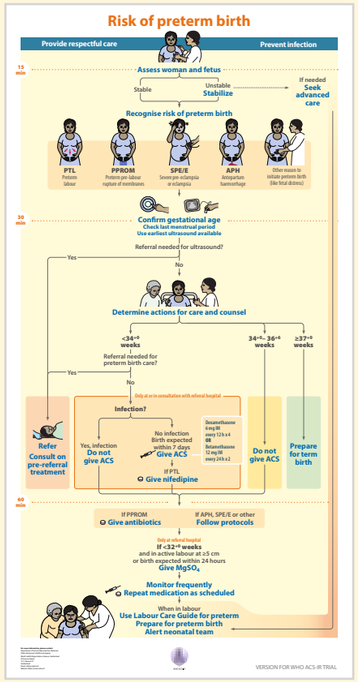
# Discuss

- What experiences have you had using ACS for threatened PTB?

# Ask

- When should you **not** give ACS and why?
  - GA ≥34 weeks, GA not confirmed by U/S, signs of infection, not at high risk of PTB in 7 days, if you are in a health centre and the perinatal team has not been consulted.

Referral hospitals ✓ Health centres ✓




# If <34+0 weeks and in preterm labour

# Give nifedipine


## Facilitation note

Provide learners with the dosing regimen that they are to follow based on facility or national protocol.

## Discuss

What kind of nifedipine do you have in your facility?

## Explain

### Why give nifedipine?

- ACS need 24–48 hours to reach maximum effect.
- Nifedipine can slow down or temporarily stop contractions (tocolysis) to allow ACS to work.
- It will not prevent preterm birth.

Referral hospitals ✓ Health centres ✓

### Only give if

- GA is beteween $24^{+0}$ and $33^{+6}$ weeks confirmed by U/S **and**
- The woman has or will receive an ACS **and**
- She is in preterm labour **and**
- There is high risk of PTB within 7 days.

**At a health centre,** the referral hospital perinatal team may ask you to give nifedipine to a woman in PTL to buy time during transport, even without U/S confirmation, as long as there is no sign of infection.

### Regimen

#### For modified/extended release nifedipine

Most commonly available

- Loading dose: 20 mg by mouth.
- Maintenance 10–20 mg by mouth every 4–8 hours.
- Never give more than:
  - 30 mg at one time, or
  - 60 mg/day.

#### For immediate release nifedipine

Less available but preferred.

- Loading dose: 20 mg by mouth.
- Repeat 20 mg by mouth every 20–30 minutes until contractions stop.
- Maintenance 20–40 mg by mouth every 8 hours.
- Never give more than:
  - 40 mg at one time, or
  - 160 mg/day.

**Never** use the regimen of immediate release with modified/extended release nifedipine. It may cause severe hypotension and cardiovascular instability.

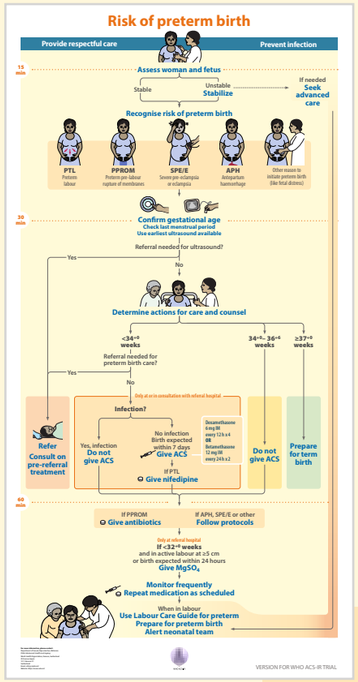
- Nifedipine can be administered:
  - for up to 72 hours unless contractions cease, or
  - until the ACS course is complete whichever comes sooner.
- Monitor for low blood pressure and hold or reduce medication as needed.
- Document.

### Do not give nifedipine if

- Cardiac disease or hypotension.
- Prolonging pregnancy is dangerous to the woman or baby.

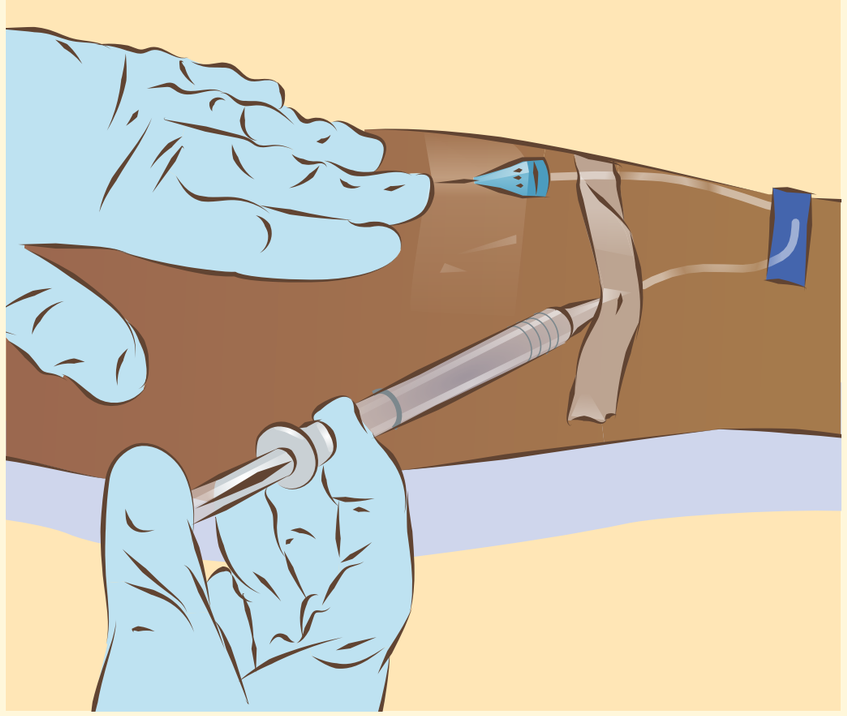
### Side effects

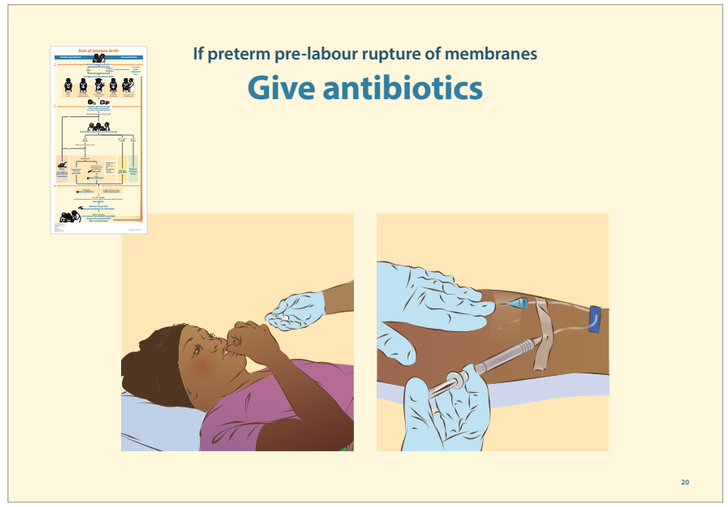
- Headache is the most common side effect – consider giving paracetamol with nifedipine.
- Other side effects include hypotension, tachycardia, palpitations, flushing, dizziness and nausea.




## If preterm pre-labour rupture of membranes

# Give antibiotics






# Explain

## Why give antibiotics?

- About one-third of women with PPROM develop infections.
- Antibiotic prophylaxis in PPROM:
  - significantly reduces morbidity from maternal infections
  - can increase the time to delivery which may allow ACS time to work.
- Maternal infections are more common the earlier the GA.

## Give only if

- No known allergy to the antibiotic. Be sure to ask about prior reactions.
- **Prophylactic** if:
  - confirmed PPROM, **and**
  - GA <37$^{+0}$ weeks confirmed by U/S.
- **Treatment** if:
  - signs of infection, **or**
  - known group B strep colonisation.

> **Do not give antibiotics to women in PTL unless they meet these criteria.** There is no known benefit and it may cause harm.

## Regimen

### For prevention

- Erythromycin 250 mg by mouth:
  - four times per day for 10 days or
  - until birth, whichever comes first.
- If erythromycin is not available, use an antibiotic with similar coverage like amoxicillin for 10 days. Follow protocols.
- **Do not use** co-amoxiclav/Augmentin as it increases the risk of necrotizing enterocolitis.

### For infection

- If any signs of infection, use local protocols based on source of infection. For example:
  - ampicillin 2 g IV every 6 hours
  - gentamycin 5mg/kg IV every 24 hours.
- Document.

## Side effects

- The most common side effects of antibiotics are diarrhea, nausea and vomiting.

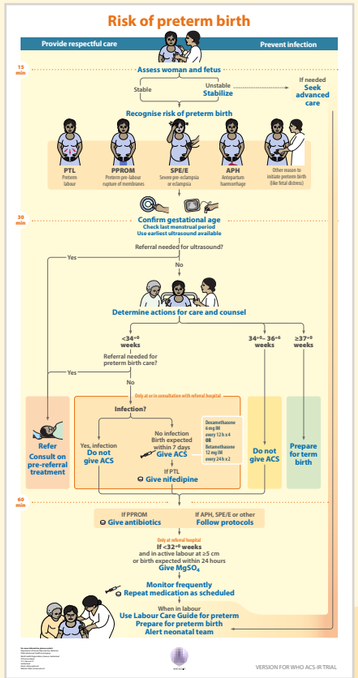
## For women with PPROM

- Keep in the hospital and limit activity until delivered.
- Do not perform digital exams.
- Monitor the woman and fetus closely – PPROM increases the risk of:
  - maternal infection
  - abruptio placentae
  - fetal malpresentation
  - prolapse of the umbilical cord.

# Ask

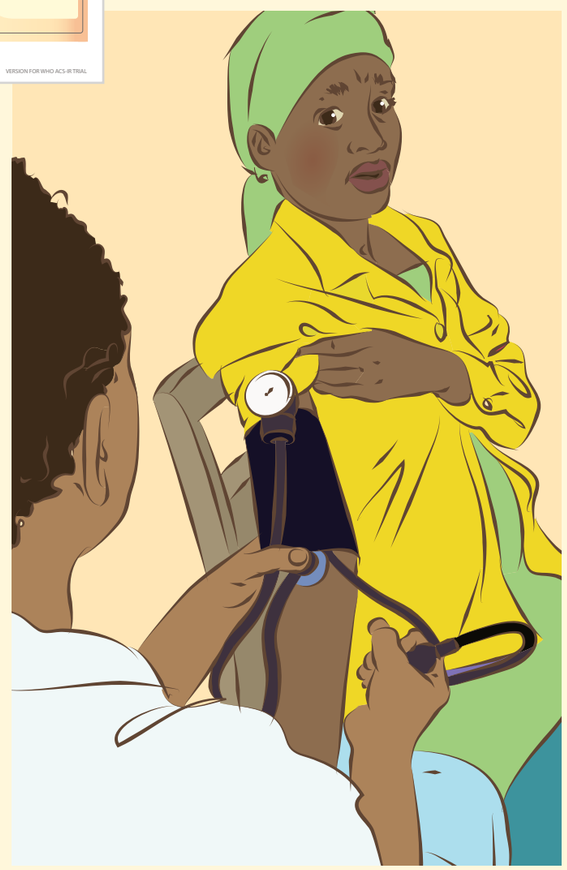
- Why should you give antibiotics in case of PPROM?
  - To reduce infection risk and maybe increase time until birth.

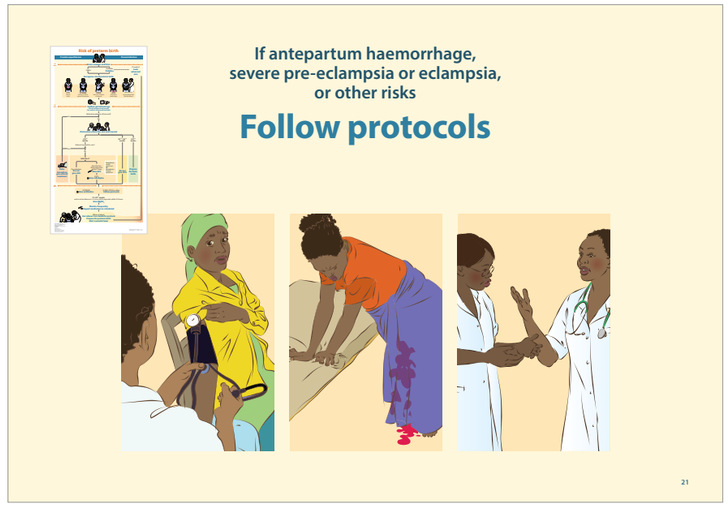
Referral hospitals ✓ Health centres ✓




## If antepartum haemorrhage, severe pre-eclampsia or eclampsia, or other risks

# Follow protocols






# Explain

## APH

- Depending on the cause of bleeding, it may be hidden or obvious.
- The woman could go into shock

### Management

- Depends on the amount of bleeding, the cause, maternal and fetal status and GA.
- You should:
  - identify the cause: placenta praevia, abruption, ruptured uterus, trauma.
  - provide initial management depending on cause and per protocols **and**
  - refer quickly if not in a referral hospital.
- Do not perform a vaginal exam unless placental position has been verified by ultrasound.

## SPE/E

- Can progress rapidly and threaten the life of both the woman and her baby.

### Management

- Depending on severity, maternal and fetal status, and GA:
  - provide initial treatment with $MgSO_4$ as per protocols and continue $MgSO_4$ for 24 hours after birth or last seizure, whichever is later
  - **refer quickly** if not in a referral hospital
  - facilitate birth if SPE is worsening or eclampsia develops.

## Provider initiated birth

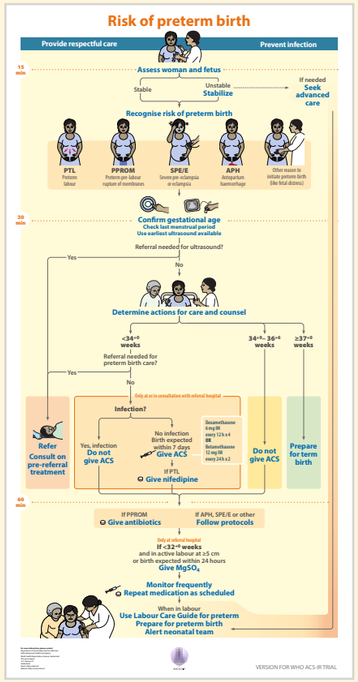
- Use local protocols to manage other complications such as trauma, fetal compromise, uncontrolled hypertension, etc.
- If not in a referral hospital, consult with the perinatal team at the referral hospital, treat, and transfer if required and safe to do so.

## If the woman and fetus are stable

- If in a health centre, consult with the perinatal team.
- Offer treatment options for women at risk of PTB, if they meet eligibility criteria.
- Continue care for the underlying medical or obstetric problem.
- Monitor both closely as their condition could deteriorate rapidly.
- Document care and medications.

> **Do not delay birth if** it is dangerous for the woman or her baby. Stabilize the woman and prepare for PTB, regardless of GA.

Referral hospitals ✓ Health centres ✓




# If <32+0 weeks and in active labour at ≥5 cm or birth expected within 24 hours

# Give $MgSO_4$

## for neuroprotection

If <32+0 weeks and in active labour at ≥5 cm
or birth expected within 24 hours

## Give $MgSO_4$

for neuroprotection

22

### Facilitation note

$MgSO_4$ for SPE/E can be given at health centres per protocol.
For neuroprotection it can only be given at referral hospitals.
For health centres, skip the second half of this page.

# Explain

## Why give $MgSO_4$

- Given within 24 hours of preterm birth – reduces incidence and severity of cerebral palsy.
- **Even one hour of exposure can have a positive impact.**

## When to give $MgSO_4$

- If at a referral hospital, give to all women with a GA <32+0 confirmed by U/S and:
  - in labour at 5 cm or more, **or**
  - birth is planned within 24 hours.

**Never** give $MgSO_4$ for neuroprotection at a health centre. If appropriate, this will be given at the referral hospital.

The rest of the page is for referral hospitals only.

## Regimen for neuroprotection

- WHO recommends:
  - 4 g $MgSO_4$ 20% solution IV over 20 minutes
  - then 1 g/hour until birth or 24 hours – whichever comes first.
- Dilution from 50% to 20% is important to:
  - prevent venous irritation
  - allow for controlled administration to prevent hypotension.
- If IV is not possible:
  - 5 g $MgSO_4$ 50% solution IM in each buttock
  - then 5 g $MgSO_4$ 50% solution every 4 hours alternating buttocks.
- IV pump is preferred but if using manually set drip rate:
  - have a colleague double-check the drip calculation and rate at the start
  - recheck drip rate and toxicity signs every 30 minutes.
- If impaired renal function – loading dose only.

**Do not** give $MgSO_4$ if known cardiac problems or myasthenia gravis.

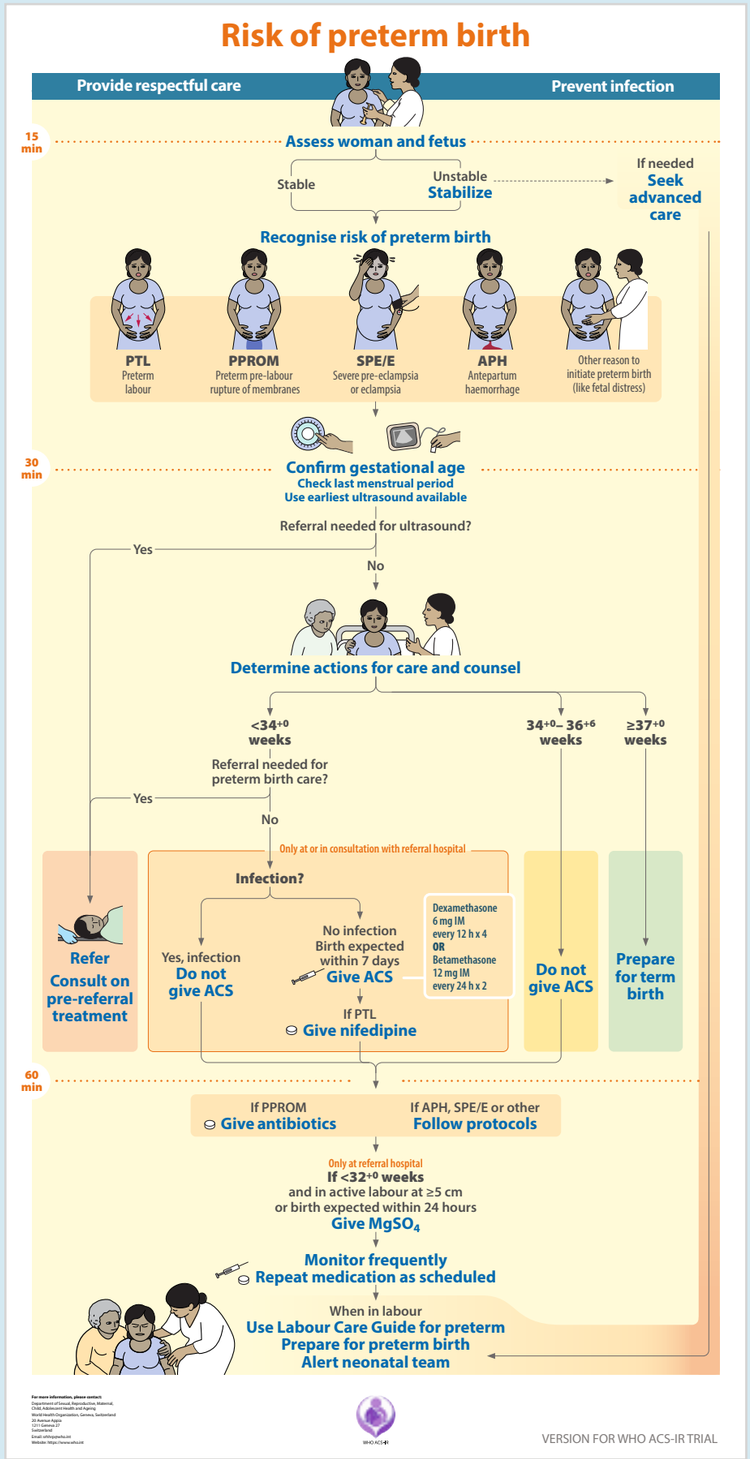
## Side effects

- Sweating, flushing, headache, nausea, warmth throughout the body.
- Slight decrease in fetal heart rate.
- Respiratory or cardiac arrest – very rare.
- Can be given with nifedipine but side effects may increase.
- Can be used for SPE/E to prevent seizures.
- Has a mild tocolytic effect but not recommended for this purpose.

## Monitor for toxicity

- Monitor hourly – record on $MgSO_4$ monitoring sheet (Provider Guide page 14).
- Stop or delay maintenance dose if:
  - patellar reflex absent
  - respirations less than 16 per minute
  - urine output less than 30 mL/hour over the past 4 hours.
- If respiratory depression occurs:
  - Assist ventilation with bag and mask
  - Give calcium gluconate 1 g IV (10 mL of 10% solution) over 3 minutes.

Referral hospitals ✓ Health centres ✓




# Activity 4: Giving $MgSO_4$ for neuroprotection

Activity 4

# Giving $MgSO_4$ for neuroprotection

## 1. Prepare

Have the following materials ready:

- clean gloves
- $MgSO_4$ 20% and/or 50% solution based on what is available, and labelled mock substitutes for practice
- IV giving set - note drip factor on packaging
- 20 mL syringe with IM needle
- 500 mL IV bottle and sterile water for dilution
- lidocaine 2%
- safe disposal system
- $MgSO_4$ monitoring form.

## 2. Discuss

1. What $MgSO_4$ regimens have you used for pre-eclampsia and eclampsia – and have you used it during preterm labour?
2. What do you think about using $MgSO_4$ for neuroprotection in your facility?
3. What criteria will you use to identify women at high risk of birth within 24 hours?
4. Do you have IV pumps in your facility?

## 3. Demonstrate and practice

Use a co-facilitator or ask for a volunteer to help with the demonstration. Highlight the challenges in correct administration of $MgSO_4$ related to variable concentrations and packaging.

Say what you are doing out loud. Show how to draw up, dilute and administer medication.

Work through the checklist on this page. Then allow participants to practise in pairs using the checklist, also available on page 22 in the Provider Guide.

**For IV-only regimen**

If the facility plans to follow the IV-only regimen, participants should practise using IV pumps or calculating and starting manual drip rates.

Have participants practice counting drops/min if they do not use infusion pumps.

## Skills practice checklist

**Prepare and give loading dose**
**4g $MgSO_4$ in 20% solution – IV injection**

- ☐ Wash hands, put on clean gloves.
- ☐ If using 20% solution:
  - draw 20 mL of $MgSO_4$ (1g/5mL) into a 20 mL syringe
- ☐ If using 50% solution:
  - draw 12 mL of sterile water for injection into a 20 mL syringe.
  - add 8 mL of 50% $MgSO_4$ (1g/2 mL) to make 20 mL of 20% solution.
- ☐ Establish IV access per protocol.
- ☐ Slowly administer the prepared syringe by IV injection over 20 minutes by pump or manually.

**Prepare and give maintenance dose when loading dose is complete**

- ☐ Wash hands, put on clean gloves.
- ☐ Add 10 g 50% $MgSO_4$ to 500 mL IV bag or bottle of saline or lactated Ringer.

**Alternative 1 – IV pump**

- ☐ Attach the prepared bag or bottle to IV pump tubing.
- ☐ Attach to IV access port.
- ☐ Set pump to deliver 1 g $MgSO_4$ per hour:
  - for 24 hours or
  - until birth (whichever comes first).

**Alternative 2 – manual/gravity drip**

- ☐ Check IV giving set packaging for drop factor (usually 10, 15, or 20 gtt/mL).
- ☐ Start the IV infusion and count the drops in the drip chamber.
- ☐ Calibrate the drops per minute based on the drop factor to infuse 50 mL/hour.
  - If the drop factor is 10 gtt/mL, this will be 8–9 drops per min.
  - 15 gtt/mL will be 12–13 drops per min.
  - 20 gtt/mL will be 16–17 drops per min.
- ☐ Give maintenance dose of 1 g $MgSO_4$ per hour:
  - for 24 hours or
  - until birth (whichever comes first).

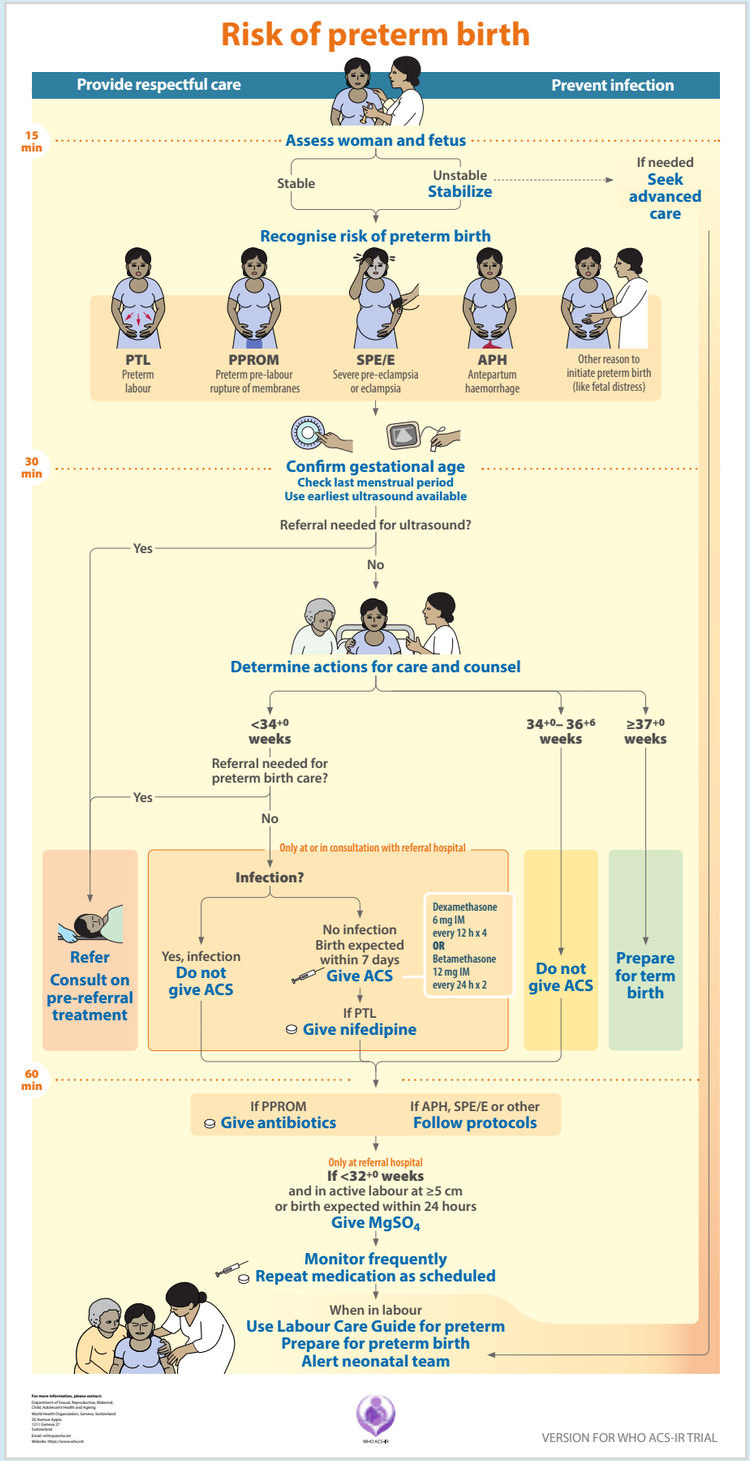
**When IV is not possible — Prepare and give $MgSO_4$ IM**

- ☐ Prepare two 10 mL syringes with 5g $MgSO_4$ 50% solution in each syringe.
- ☐ Draw 10 mL of $MgSO_4$ 50% solution to equal 5g into each syringe.
- ☐ Add 1 mL of 2% lignocaine to each syringe.
- ☐ Clean injection site and give deep IM injection in one buttock.
- ☐ Repeat with second syringe containing 5g $MgSO_4$ in the other buttock.
- ☐ Dispose of used needle, syringe and opened vials in a puncture-proof container.

**Check toxicity and document**

- ☐ Monitor for toxicity every hour.
- ☐ Stop or delay maintenance dose if:
  - patellar reflex absent
  - respirations less than 16 per minute
  - urine output less than 30 mL/hr over the past 4 hours.
- ☐ For both IV and IM, document time, medication, route, amount, and site.

Referral hospitals ✓ Health centres ✗




# Activity 5 for referral hospitals: Interventions

## For each case

- Determine the risk of PTB.
- Note the GA.
- Decide on four interventions and why:
  - ACS
  - nifedipine
  - antibiotics (prophylactic or treatment)
  - $MgSO_4$ for neuroprotection.

Activity 5

# Interventions for referral hospitals

## 1. Prepare

Have participants turn to page 24 in the provider guide.

## 2. Instructions

You will read each case aloud to the group and have them answer the questions. Once the participants have noted their answers, discuss and clarify doubts with the whole group before moving on to the next case in the same way.

**Tell participants:**

> Now that you can identify risks of preterm birth, calculate gestational age, and understand how and when to use the interventions, we will use cases to practice making decisions about which interventions to provide.
>
> Got to page 24 in the Provider guide. I will read each case and will ask for volunteers to answer:
>
> — the risk factor for PTB
> — the GA and if it is confirmed by U/S
> — whether the four interventions below are appropriate and your rationale:
>
> - ACS
> - nifedipine
> - antibiotics (prophylactic or treatment)
> - $MgSO_4$ for fetal neuroprotection.
>
> We will come to agreement and then move to the next case.

**Case 1**

> Sadia is $30^{+2}$ weeks pregnant (certain LMP, confirmed by 1st trimester U/S). She reports cramping and pelvic pressure that started 4 hours ago. On examination, she is having 12 contractions per hour. Cervical examination reveals 3 cm dilation and 80% effacement. Her membranes are intact. She has no vaginal bleeding, no fever and no signs of SPE/E.

— PTB risk: PTL.
— GA: $30^{+2}$ weeks (confirmed).
— ACS: Yes – GA <34 weeks and no infection.
— Nifedipine: Yes – GA <34 weeks and in labour.
— Antibiotics: No – membranes intact, no signs of infection.
— $MgSO_4$: Yes – at referral facility when cervix reaches 5 cm.

**Case 2**

> Amina is $31^{+2}$ weeks (certain LMP, confirmed by 2nd trimester U/S). She reports leaking clear fluid since yesterday. On speculum exam, you see clear fluid pooling in the posterior fornix and nitrazine test is positive. She has no contractions, no vaginal bleeding, no fever and no signs of SPE/E.

— PTB risk: PPROM.
— GA: $31^{+2}$ weeks (confirmed).
— ACS: yes. No infection and birth will likely occur within 7 days.
— Nifedipine: no – not in labour.
— Antibiotics: yes – prophylactic for PPROM <37 weeks.
— $MgSO_4$: no – not in labour yet.

**Case 3**

> Mira has light vaginal bleeding. Her LMP is uncertain and suggests $33^{+2}$ weeks. An ultrasound done today shows $35^{+2}$ weeks. She is not having contractions and has no signs infection or SPE/E.

— PTB risk: Possible APH.
— GA: GA $35^{+2}$.
— ACS: No. GA $>34^{+0}$.
— Nifedipine: no – not in labour.
— Prophylactic antibiotics: no – no PPROM.
— $MgSO_4$: no, GA $>32^{+0}$.

**Case 4**

> Maria's blood pressure is 165/115 mmHg. She has a severe headache and her urine shows 3+ protein. She is $32^{+4}$ weeks pregnant (certain LMP, confirmed by 2nd trimester U/S). She has no vaginal bleeding, is not in labour, her membranes are intact and she has no signs of infection.

— PTB risk: Severe pre-eclampsia.
— GA: $32^{+4}$ weeks (confirmed).
— ACS: yes – delivery will likely be needed soon.
— Nifedipine: no – not in labour (may be used for BP control, a different indication).
— Prophylactic antibiotics: no – intact membrane and no signs of infections.
— $MgSO_4$: not for neuroprotection but likely needed for SPE.

**Case 5 - pairs**

> Sarah is $28^{+3}$ weeks (certain LMP, confirmed by 2nd trimester U/S). She has uncontrolled diabetes mellitus. She is contracting every 4 minutes and her cervix is 5 cm dilated and 80% effaced. She has no vaginal bleeding, her membranes are intact and she has no signs of infection or SPE/E.

— PTB risk: PTL.
— GA: $28^{+3}$ weeks (confirmed).
— ACS: yes – monitor blood glucose closely, may need additional insulin.
— Nifedipine: yes – GA <34 weeks and in labour.
— Prophylactic antibiotics: no – intact membranes.
— $MgSO_4$: yes – at referral hostpital if labour does not stop and birth is expected within 24 hours.

**Case 6 - pairs**

> Ruth arrives with heavy vaginal bleeding. She is $31^{+1}$ weeks (uncertain LMP, confirmed by 2nd trimester U/S) with fundal height 34 cm. She is not in labour and has no signs of SPE/E or infection.

— PTB risk: APH.
— GA: $31^{+1}$ weeks (confirmed).
— ACS: yes – may need delivery soon.
— Nifedipine: no – bleeding is a contraindication, even if she develops contractions.
— Prophylactic antibiotics: no – intact membranes.
— $MgSO_4$: yes – at referral facility if delivery expected within 24 hours.

**Case 7 - pairs**

> Joy is $30^{+4}$ weeks (certain LMP, confirmed by 2nd trimester U/S). She has had two previous preterm deliveries and is very worried she will have another preterm birth. However, she has no symptoms and no signs of any condition that would lead to birth in the next 7 days.

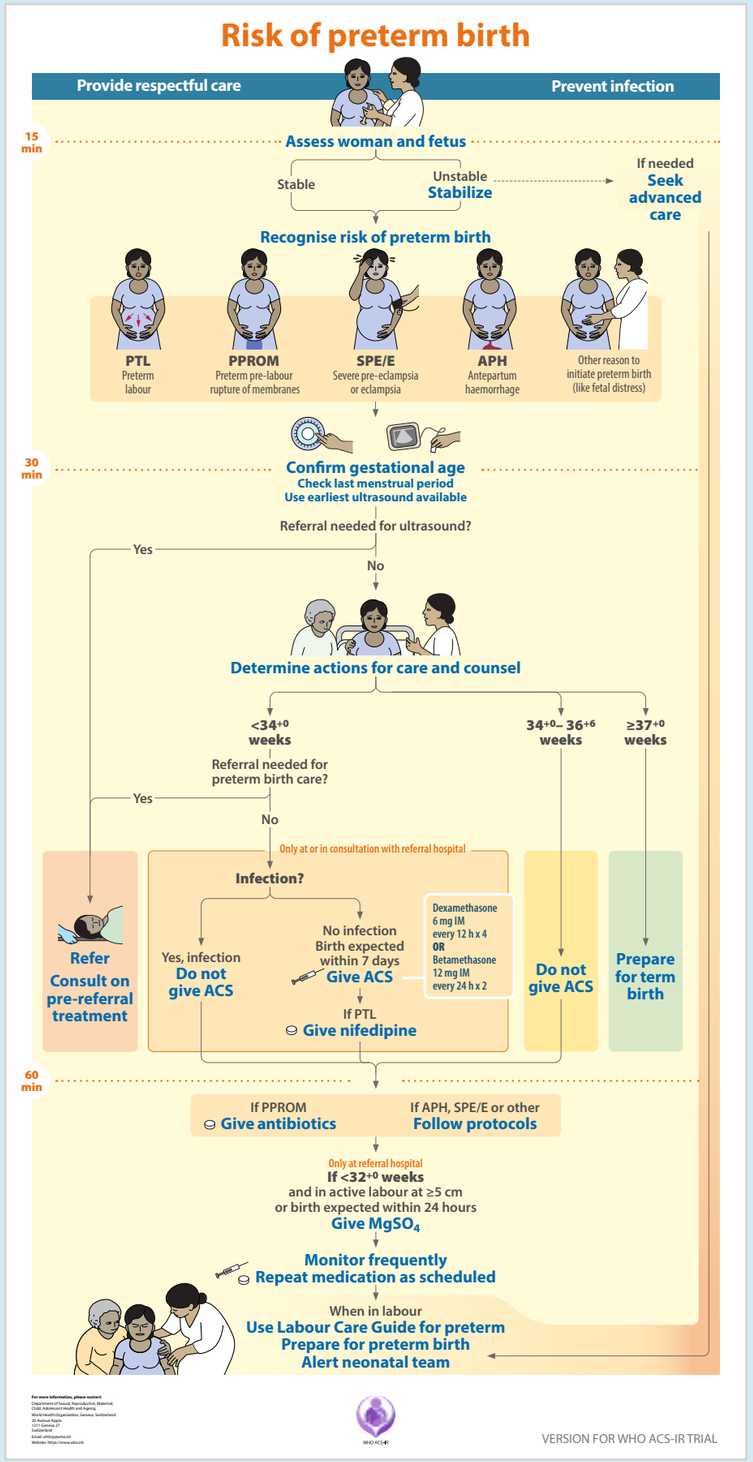
— PTB risk: History of PTB (risk factor only, no acute presentation).
— GA: $30^{+4}$ weeks (confirmed).
— ACS: no – no acute risk in next 7 days.
— Nifedipine: no – no labour.
— Prophylactic antibiotics: no – no indication.
— $MgSO_4$: no – no acute risk.
— Key learning: Risk factors for PTB ≠ acute PTB requiring intervention. Joy needs close monitoring but no interventions now.

**Case 8 - pairs**

> Fatima is $29^{+4}$ weeks (uncertain LMP, confirmed by 2nd trimester U/S). She arrives with fever of 39 °C leaking fluid. Her uterus is tender on palpation. She has maternal tachycardia (pulse 120) and fetal tachycardia (FHR 175). She is not contracting. By sterile speculum exam, her cervix appears closed and thick with pooling of fluid in the posterior fornix. Nitrazine is positive. No vaginal bleeding or signs of SPE/E.

— PTB risk: PPROM with infection.
— GA: $29^{+4}$ weeks (confirmed).
— ACS: no – infection present, do not delay delivery.
— Nifedipine: no – not in labour, do not delay delivery.
— Antibiotics: yes, to treat infection (ampicillin and gentamicin).
— $MgSO_4$: yes – at referral facility, birth likely within 24 hours.

Referral hospitals ✓ | Health centres ✗




# Activity 5 for health centres: Interventions

## For each case

- Determine the risk of PTB.
- Note the GA.
- Decide on pre-referral interventions in consultation with the referral hospital:
  - ACS
  - nifedipine
  - antibiotics (prophylactic or treatment).
- $MgSO_4$ at referral hospital?

Activity 5

# Interventions for health centres

## 1. Prepare

Have participants turn to page 25 in the provider guide.

## 2. Instructions

You will read each case aloud to the group and have them answer the questions. Once the participants have noted their answers, discuss and clarify doubts with the whole group before moving on to the next case in the same way.

**Tell participants:**

> Now that you can identify risks of preterm birth, calculate gestational age and understand how and when to use the interventions, we will use cases to practice making decisions about which interventions to provide.
>
> Got to page 25 in the Provider guide. I will read each case and will ask for volunteers to answer:
>
> — the risk factor for PTB
> — the GA and if it is confirmed by U/S
> — whether the four interventions below are appropriate and your rationale:
>
> • ACS
> • nifedipine
> • antibiotics (prophylactic or treatment)
>
> — Note that $MgSO_4$ for fetal neuroprotection may be given at the referral hospital but not at health centres.
>
> We will come to agreement and then move to the next case.

**Case 1 – Demonstration with whole group**

> Sadia is $30^{+2}$ weeks pregnant (certain LMP, confirmed by 1st trimester U/S). She reports cramping and pelvic pressure that started 4 hours ago. On examination, she is having 12 contractions per hour. Cervical examination reveals 3 cm dilation and 80% effacement. Her membranes are intact. She has no vaginal bleeding, no fever and no signs of SPE/E.

— PTB risk: PTL.
— GA: $30^{+2}$ weeks (confirmed).
— ACS: yes – if agreement with perinatal team at the referral hospital, referral is arranged, and birth likely within 7 days; start before transfer.
— Nifedipine: yes – if agreement with perinatal team at the referral hospital, start before transfer.
— Antibiotics: no – membranes intact, no signs of infection.
— $MgSO_4$: no – not given at health centre, will be given at referral hospital.

**Case 2 – pairs**

> Aisha is $31^{+2}$ weeks pregnant (certain LMP, confirmed by 2nd trimester U/S). She reports leaking clear fluid since yesterday. On speculum exam, you see clear fluid pooling in the posterior fornix and nitrazine test is positive. She has no contractions, no vaginal bleeding, no fever and no signs of SPE/E.

— PTB risk: PPROM.
— GA: $31^{+2}$ weeks (confirmed).
— ACS: yes – if agreement with perinatal team at the referral hospital, referral is arranged, and birth likely within 7 days, start before transfer.
— Nifedipine: no – not in labour.
— Antibiotics: yes – prophylactic for PPROM <37 weeks.
— $MgSO_4$ at referral hospital? Not yet – not in labour.

**Case 3 – pairs**

> Clara has light vaginal bleeding. Her LMP is uncertain and suggests $33^{+2}$ weeks. Her fundal height is 32 cm. She is not having contractions but her uterus is tender and her temperature is 39. She has no signs of SPE/E.

— Type of PTB risk: possible APH.
— GA: uncertain (unreliable LMP).
— ACS: no. Never give ACS without reliable U/S-confirmed GA. Refer for proper dating. Never give ACS with infection.
— Nifedipine: no – not in labour.
— Antibiotics: no – no indication.
— $MgSO_4$ at referral facility? Likely no – but the GA is uncertain.

**Case 4 – pairs**

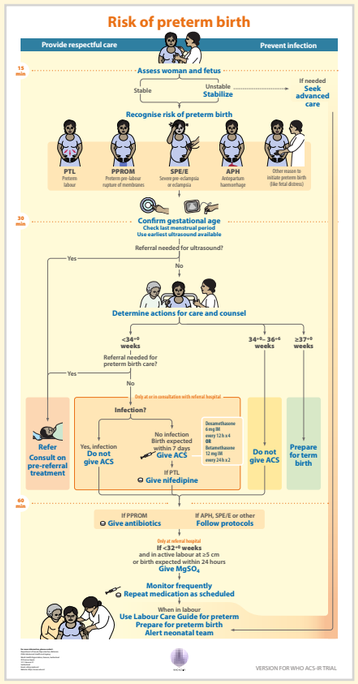
> Diana's blood pressure is 165/115 mmHg. She has a severe headache and her urine shows 3+ protein. She is $33^{+4}$ weeks pregnant (certain LMP, confirmed by 2nd trimester U/S). She has no vaginal bleeding, is not in labour, her membranes are intact and she has no signs of infection.

— PTB risk: severe pre-eclampsia.
— GA: $33^{+4}$ weeks (confirmed).
— ACS: yes – if agreement with perinatal team at the referral hospital, referral is arranged and birth likely within 7 days, start before transfer.
— Nifedipine: not for tocolysis – not in labour (may be used for BP control, different indication).
— Antibiotics: no – membranes intact.
— $MgSO_4$: not for neuroprotection but yes at health centre for treatment of SPE, follow SPE protocols.

**Case 5 – pairs**

> Rosa is $30^{+4}$ weeks pregnant (certain LMP, confirmed by 1st trimester U/S). She has had two previous preterm deliveries and is very worried she will have another. However, she has no symptoms and no signs of any condition that would lead to birth in the next 7 days.

— PTB risk: history of PTB (risk factor only; no acute presentation).
— GA: $30^{+4}$ weeks (confirmed).
— ACS: no – no acute risk in next 7 days.
— Nifedipine: no – not in labour.
— Antibiotics: no – no indication.
— $MgSO_4$ at referral hospital? No – no acute risk, not in labour.
— Key learning: risk factors for PTB are not the same as acute risk. Rosa needs close monitoring but not acute interventions now.




# Counselling

## Counselling checklist

- ☐ Explain options, including doing nothing.
- ☐ For each option, explain benefits, risks, and uncertainties.
- ☐ Check that the patient understands. Ask if she has any questions.
- ☐ State your recommendation and explain what you will do.
- ☐ Ask permission to start care.


## Explain

- Every woman has the right to make informed decisions about her care including:
  - where she receives it **and**
  - whether to accept or decline treatment.
- Counsel every woman together with her support people before any intervention.

## Counselling tips

- Use clear, simple language to explain your findings and what they mean.
- If transfer is needed, explain:
  - why, when it will happen, **and**
  - what care she will receive before and after referral.
- Come to agreement on the plan of care together, then obtain informed consent.

## Counselling checklist

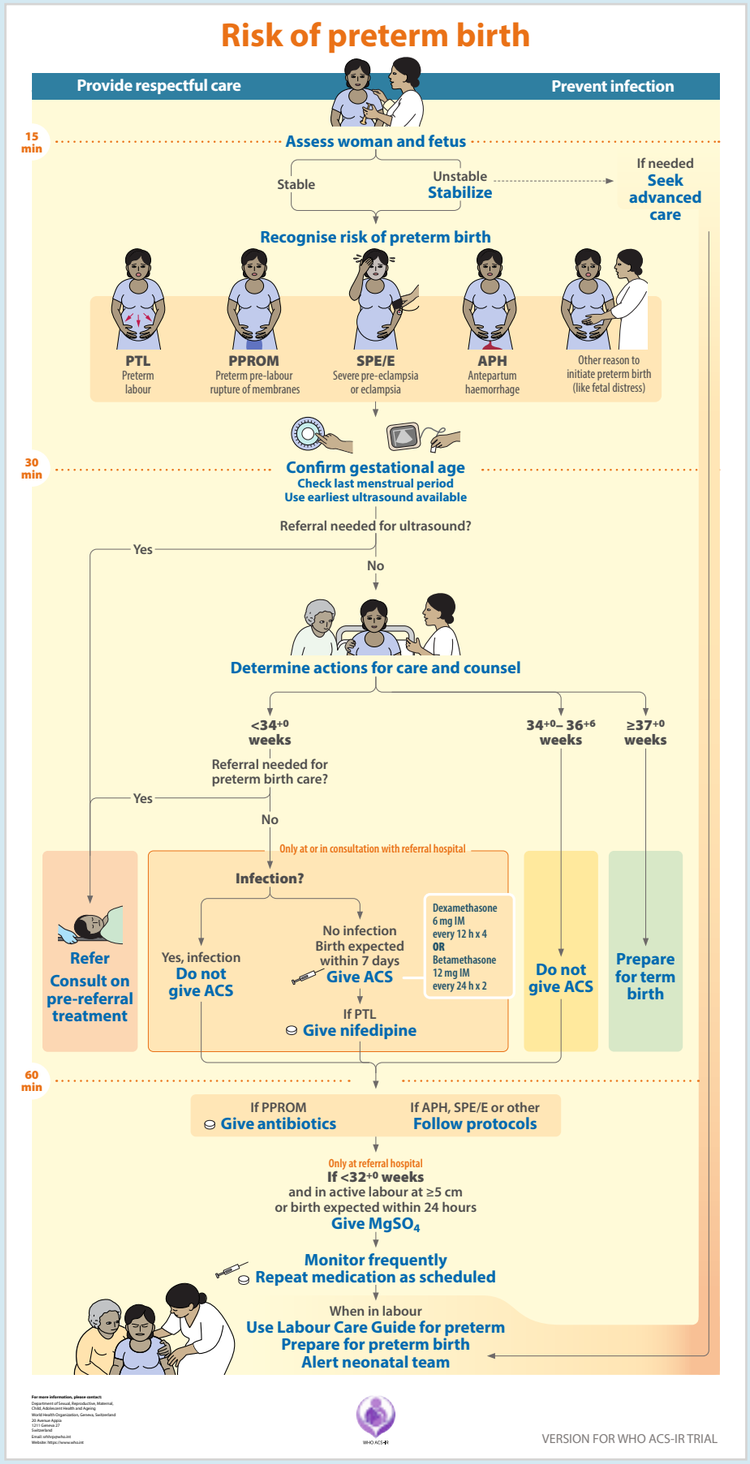
Direct learners to the front of this flip chart page and take them through the checklist:

- ☐ Explain all options – including the option of doing nothing.
- ☐ For each option – explain benefits, risks, and any uncertainties.
- ☐ Check that she understands – ask if she has questions before moving on.
- ☐ Give your recommendation – explain clearly what will happen, how, and when (for example, how and when ACS will be given).
- ☐ Ask her permission before starting any care.

## Discuss

1. Why are good counselling and consent important?
2. How is this similar to or different from what you do now?
3. What do you think about asking patients for their permission before starting care?
   - Explore current practice, barriers to obtaining informed consent, fears, and benefits of counselling.

Referral hospitals ✓ Health centres ✓




# Activity 6: Counselling

## Counselling checklist

- ☐ Explain options, including doing nothing.
- ☐ For each option, explain benefits, risks and uncertainties.
- ☐ Check that the patient understands what you have said. Ask if she has any questions.
- ☐ State your recommendation and explain what you will do.
- ☐ Ask permission to start care.

Activity 6

# Counselling

## 1. Prepare

- Ensure all participants can see the counselling checklist on the front of this Flip Chart page.
- There are two types of cases, for health centres or for referral hospitals. Choose either based on where you are.

## 2. Instructions

- Use the first case as a demonstration, with the whole group. Invite a learner to be Sadia so you can show counselling.
- Next, you will invite a pair of learners to present the next case to the group. Give them 5 minutes to role play and have the observers follow along on the medication chart in the Provider Guide on pages 26 (referral hospitals) and 27 (health centres)
- When the first pair is done, discuss how it felt to be both the woman and the provider. Invite observers to give feedback before moving to the next case.
- Then, invite a new pair to role play another case and discuss.

**Tell participants:**

> We will practise counselling using role play, with the cases you find on pages 26 (referral hospitals) and 27 (health centres) in the Provider Guide. I will demonstrate the first case; then you will demonstrate to the group in pairs.
>
> Choose a case and take roles:
>
> — **Role one: the woman.** Open your Provider Guide on page 26 or 27 with the cases.
> — **Role two: the health worker**. Open your Provider Guide to page 12 for the medication information. Pay close attention to the "benefits" and "considerations" columns to help you counsel about each drug.
>
> Use the counselling checklist on the front page of this Flip Chart. Other participants look at the medication table to follow along.

## 3. Discuss

1. What went well?
2. What was difficult?
3. How will you do things differently in your practice?

## Cases for referral hospitals

**Case 1 – demonstrate**

> Sadia is G2P1, and $30^{+2}$ weeks pregnant. She is contracting every 5 minutes and her cervix is 3 cm dilated and 80% effaced. She has no signs of infection, no vaginal bleeding and no signs of SPE/E.

- Role 1: Act as Sadia. You are scared your baby will come too soon. You want to know if the medicines will harm your baby.
- Role 2: Counsel Sadia about ACS and nifedipine and $MgSO_4$ when birth is close.. Use the counselling checklist.

**Case 2 – pair volunteers to present to group**

> Miriam is G3P2, and $28^{+3}$ weeks pregnant. She reports that her waters broke 6 hours ago which you have confirmed on speculum examination. She has no contractions or vaginal bleeding, no signs of infection and no signs of SPE/E.

- Role 1: Act as Miriam. You feel fine and do not understand why you need medication or why you cannot go home.
- Role 2: Counsel Miriam about ACS, prophylactic antibiotics and $MgSO_4$ for neuroprotection when birth is close. Use the counselling checklist.

**Case 3 – pair volunteers to present to group**

> Nadia is G4P3, and $32^{+1}$ weeks pregnant. Her blood pressure is 158/108 with 2+ proteinuria and she has a severe headache. She is not in labour, has no signs of infection, no vaginal bleeding or leaking fluid.

- Role 1: Act as Nadia. You have a headache. You are worried about the side effects of medicines on your baby.
- Role 2: Counsel Nadia about $MgSO_4$ for treatment of SPE, ACS for fetal lungs. Use the counselling checklist.

**Case 4 – pair volunteers to present to group**

> Patience is G1P0, and $33^{+4}$ weeks pregnant. She is contracting every 4 minutes and her cervix is 4 cm dilated and 80% effaced. Her membranes are intact, but she has uterine tenderness and her temperature is 39 C. There are no signs of SPE/E and she is not bleeding.

- Role 1: Act as Patience. This is your first pregnancy. You are scared the baby will come too soon and want to know if anything can stop the labour.
- Role 2: Counsel Patience about need for antibiotics and that you will not slow down labor because she has an infection. Use the counselling checklist.

## Cases for health centres

**Case 1 – demonstrate**

> Sadia is G2P1, and $30^{+2}$ weeks pregnant. She is contracting every 5 minutes and her cervix is 3 cm dilated and 80% effaced. She has no signs of infection, no vaginal bleeding and no signs of SPE/E. You consulted with the referral hospital and you will give her ACS and nifedipine before transfer.

- Role 1: Act as Sadia. You are scared your baby will come too soon. You want to know if the medicines will harm your baby.
- Role 2: Counsel Sadia about ACS, nifedipine and the need for transfer to the referral facility. Use the counselling checklist.

**Case 2 – pair volunteers to present to group**

> Miriam is G3P2, and $28^{+3}$ weeks pregnant. She reports that her waters broke 6 hours ago. She has no contractions or vaginal bleeding, no signs of infection and no signs of SPE/E. You consulted with the referral hospital and you will give her ACS and antibiotics before transfer.

- Role 1: Act as Miriam. You feel fine and do not understand why you need medication or why you cannot go home.
- Role 2: Counsel Miriam about ACS, prophylactic antibiotics and the need for transfer to the referral facility for $MgSO_4$ and care for her and her newborn. Use the counselling checklist.

**Case 3 – pair volunteers to present to group**

> Nadia is G4P3, and $32^{+1}$ weeks pregnant. Her blood pressure is 158/108 and she has a severe headache. She is not in labour, has no signs of infection, no vaginal bleeding or leaking fluid. You consulted with the referral hospital and you will give her ACS and $MgSO_4$ for SPE before transfer.

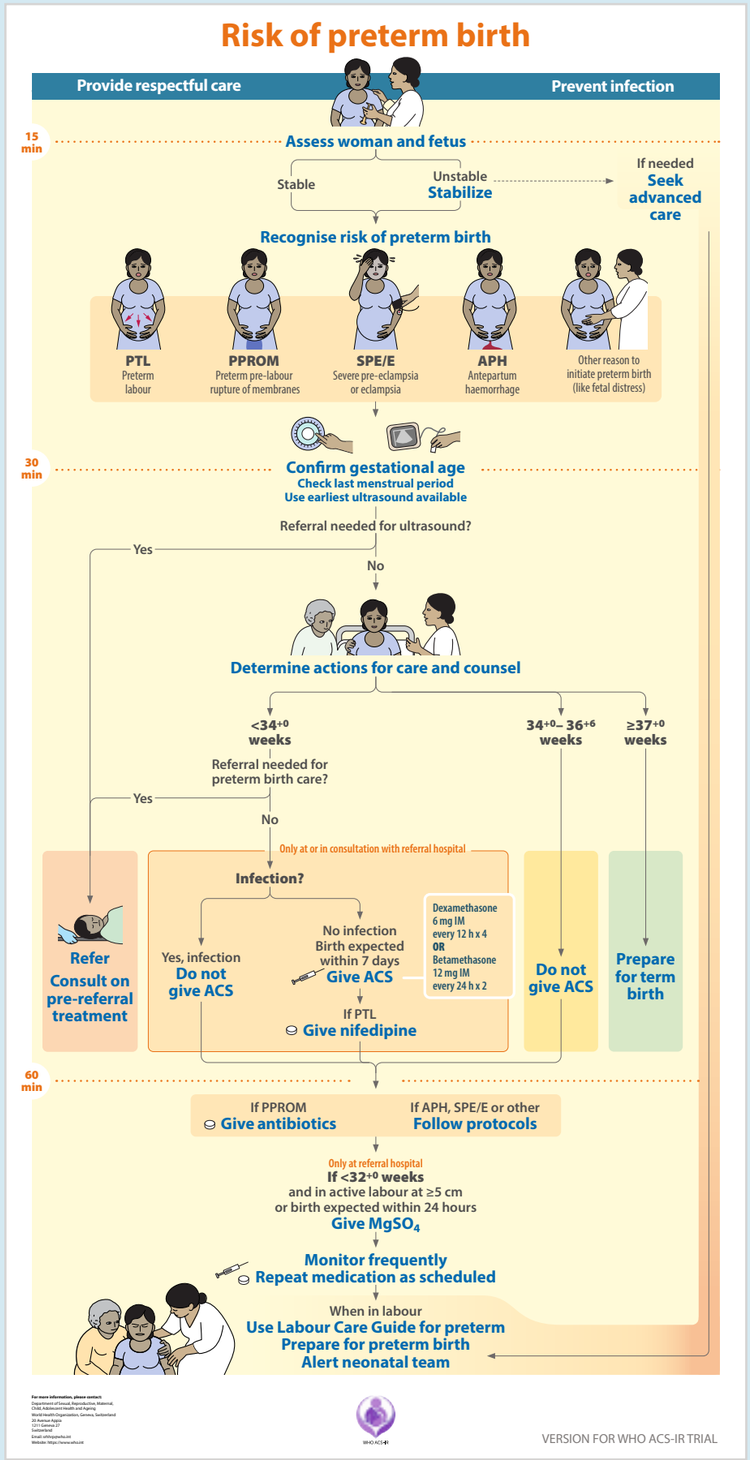
- Role 1: Act as Nadia. You have a headache. You are worried about the side effects of medicines on your baby.
- Role 2: Counsel Nadia about $MgSO_4$ for treatment of SPE, ACS for fetal lungs, and the plan to transfer to the referral facility. Use the counselling checklist.

**Case 4 – pair volunteers to present to group**

> Patience is G1P0, and $33^{+4}$ weeks pregnant. She is contracting every 4 minute and her cervix is 4 cm dilated and 80% effaced. Her membranes are intact, but she has uterine tenderness and her temperature is 39 C. There are no signs of SPE/E and she is not bleeding. You consulted with the referral hospital and you will give her ACS and nifedipine before transfer.

- Role 1: Act as Patience. This is your first pregnancy. You are scared the baby will come too soon and want to know if anything can stop the labour.
- Role 2: Counsel Patience about need for antibiotics and that she needs to be transferred. Use the counselling checklist.

Referral hospitals ✓ Health centres ✓




# Activity 7 for health centres: Scenario practice for pre-referral care

Activity 7

# Scenario practice for health centres on pre-referral care

## 1. Prepare

- See list of equipment and supplies on page 1b.
- Have a Referral form ready if participants decide to refer.
- You will act as a member of the referral team and you can give prompts still playing that role. You will approve ACS and nifedipine before transfer if they give an adequate reporting of Sadia's condition. Because you have a participant acting as the woman, during the simulation, give the prompts.

## 2. Brief

Introduce the activity clearly to prepare participants mentally and emotionally. Resolve doubts and establish a psychologically safe learning environment.

### Share the learning outcomes

- Work as a team and communicate.
- Give appropriate care.
- Document appropriately.

### Assign roles

- Health worker 1.
- Woman (volunteer).
- Referral team member (facilitator).

### Read the case

> You are caring for Sadia who we have been following since Activity 2.
>
> — She came in today at $30^{+2}$ weeks pregnant (certain LMP, confirmed by 1st trimester U/S).
> — On examination, you found she is having 12 contractions per hour, FHR 144, uterus nontender, vital signs all normal. Sterile speculum examination reveals 3 cm dilation and 80% effacement which is confirmed by cervical examination.
> — You diagnosed her to be in PTL with intact membranes.
> — She had no vaginal bleeding, no fever and no signs of SPE/E.
>
> Provide care for Sadia. Use the Action Plan and the Provider Guide as resources.

### Resolve doubts

Answer any questions participants may have.

## 3. Run the scenario

The simulation should be as realistic as possible. Use realistic equipment and encourage participants to act as they would in their real-life roles.

## 4. Debrief

The debrief after the scenario is where most learning happens. Start by establishing trust, mutual respect and a non-judgmental tone. The goal is learning, not evaluation.

**Ask participants:**

- What happened during the simulation?
  - —Focus on facts and actions, not interpretations.
- What went well? What would you do differently?
  - —Encourage reflection of their thought processes, emotions and decision-making.
- How can we apply these insights in the future?
  - —Connect the experience to clinical practice or real-world application.
  - —Highlight learnings and correct behaviours.

## 5. Key takeaways

- Identify need for referral.
- Work as a team and communicate using SBAR and referral form.
- Counsel the woman, gain consent and share decision making.
- Give appropriate care.

| Expected actions | Prompts and info |
|---|---|
| ☐ Call perinatal team at the referral hospital<br>☐ Communicate using SBAR | "Is there someone you need to call?"<br>After adequate reporting of Sadia's condition: "Please give Sadia nifedipine 20 mg by mouth for tocolysis and betamethasone 12 mg IM before referring her to us." |
| ☐ Give counseling on referral, nifedipine and ACS<br>☐ Share decision making and gain consent | "What is going to happen to Sadia?"<br>"Did Sadia agree to the plan?" |
| ☐ Give nifedipine 20mg by mouth<br>☐ Give betamethasone 12 mg IM | "Should you check if she needs medicines?" |
| ☐ Fill referral form appropriately | "Do you need to fill out a referral form to send with Sadia to the referral hospital?" |

Referral hospitals ✕ | Health centres ✓

Pause and reflect

# Care for a woman at risk of PTB depends on where she is

## Perinatal team at referral hospital

### Provide full clinical management

| | |
|---|---|
| **ACS** | Full course for lung maturity if:<br>• no infection<br>• <34$^{+0}$ weeks<br>• birth expected within 7 days. |
| **Nifedipine** | Ongoing if:<br>• in PTL<br>• to buy time for ACS to work. |
| **$MgSO_4$** | For neuroprotection if:<br>• <34$^{+0}$ weeks<br>• birth expected within 24 hours. |

### Provide advanced neonatal care

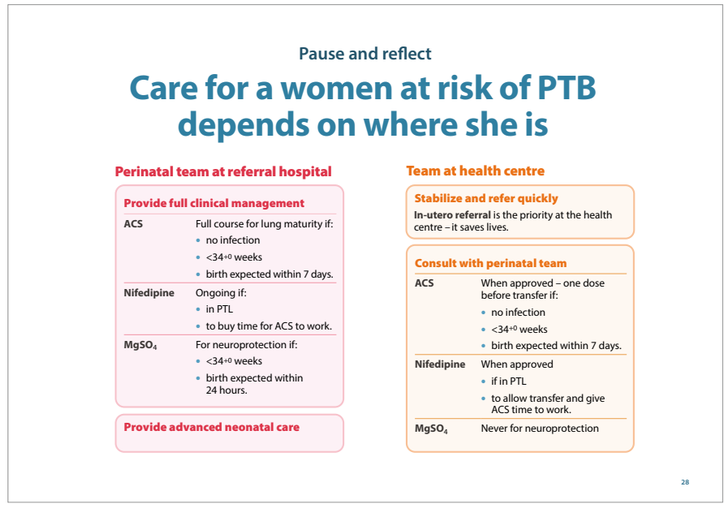
## Team at health centre

### Stabilize and refer quickly

**In-utero referral** is the priority at the health centre – it saves lives.

### Consult with perinatal team

| | |
|---|---|
| **ACS** | When approved – one dose before transfer if:<br>• no infection<br>• <34$^{+0}$ weeks<br>• birth expected within 7 days. |
| **Nifedipine** | When approved<br>• if in PTL<br>• to allow transfer and give ACS time to work. |
| **$MgSO_4$** | Never for neuroprotection. |




# Explain

## Different levels of care – different actions

### At the referral hospital

- Full clinical management is given based on gestational age:
  - ACS course if <34+0 weeks and no infection
  - nifedipine if in PTL to allow ACS to work
  - antibiotics as needed for infection prevention or treatment
  - $MgSO_4$ for neuroprotection if appropriate.
- Advanced neonatal care in the NICU if needed.

### At the at the health centre

- Consult quickly with perinatal team at the referral hospital.
- Stabilize and refer.
- If approved by perinatal team at the referral hospital and GA confirmed by U/S:
  - give one dose of ACS
  - give nifedipine to allow transfer if PTL
  - give antibiotics if needed for PPROM or infection.

> **In-utero referral** is the priority for the health centre – it saves lives. Preterm newborns need advanced care at the referral hospital.

### Pre-referral you should never

- Never give ACS without consulting with the perinatal team at the referral hospital.
- Never give ACS if GA is uncertain or infection is suspected.
- Never delay referral to finish a treatment.
- Never give $MgSO_4$ for neuroprotection.
- Never attempt delivery if referral is possible.

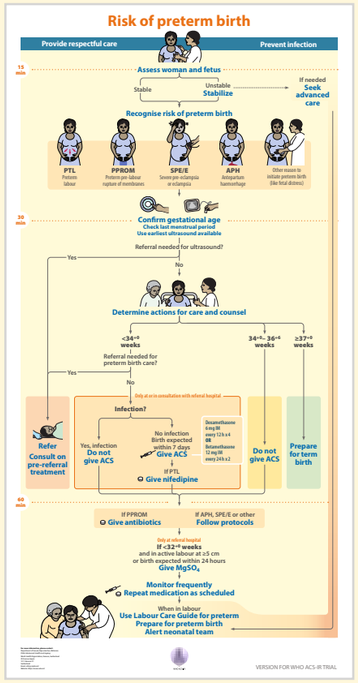
## Ask – referral hostpitals

1. Why would you give nifedipine?
   — To slow contractions and give the ACS time to work.
2. What three things must be true before you give ACS or approve a health centre to do so?
   — <34 weeks confirmed by U/S, no signs of infection, birth expected within 7 days.
3. What do you do if a woman refuses the treatment you recommend?
   — Respect her decision, ensure good counseling, agree on a plan, document the discussion and plan.

## Ask – health centres

1. What is the most important action when a woman is in at high risk of PTB at a health centre?
   — Arrange urgent referral without delay.
2. When may you give ACS at a health centre?
   — When advised to do so by the perinatal team at the referral hospital and <34 weeks confirmed by U/S, no infection and birth expected within 7 days.
3. Name three things you must never do at a health centre when managing preterm labour.
   — Never give ACS without consulting the perinatal team at the referral hospital, never give magnesium sulfate for neuroprotection, never delay referral.
4. What do you do if a woman refuses referral?
   — Respect her decision, ensure good counselling, document and agree on a plan together.

Referral hospitals ✓ Health centres ✓




# Monitor frequently and complete medications as scheduled


# Explain

Monitor both the woman and fetus carefully to assess their conditions. This applies to health centres who are caring for women before transfer as well as referral hospitals.

## Maternal assessment

- Ask about danger signs.
- Ask about side effects of treatment.
- Ask how she is coping. Women at risk of PTB experience more stress during pregnancy.
- Ask if she is having contractions.
- Check for signs of infection and the presence of uterine contractions.

## Fetal assessment

- Ask the woman if her baby is moving.
- Listen to the FHR:
  - use a Doppler or a Pinard stethoscope
  - check FHR per protocol and before giving any medications.

**If she has danger signs** stabilize the woman and manage.

## Counsel

- Share your findings on assessment and what they mean with the woman.
- If she is having side effects of medications or other problems, counsel her on options.
- Come to agreement on what additional assessments and care are needed.

## Document and communicate

- Document findings and the plan.
- Document medications:
  - drug given
  - time
  - dosage
  - route
  - injection location
  - time next dose is due.
- When changing shift:
  - review patients with oncoming staff
  - share when next drug doses are due.

## Complete medication courses

- Tell the woman and/or support people when next doses are due even is she is being referred. Encourage them to ask a provider if the doses are not given.
- If in a referral hospital, a single repeat course of an ACS may be beneficial if the previous course was given over 7 days ago **if**:
  - GA is still <$34^{+0}$ weeks **and**
  - there is a high risk of PTB in the next 7 days **and**
  - there is no clinical evidence of maternal infection.

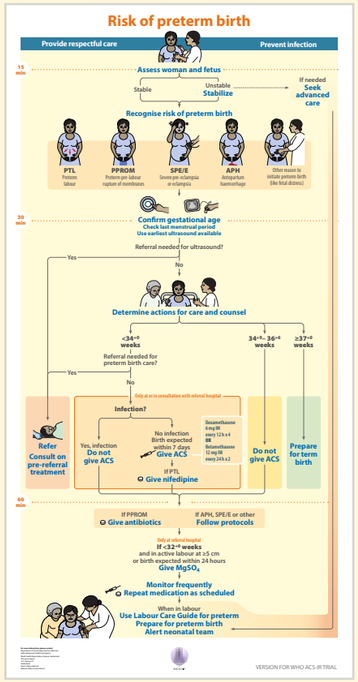
# Discuss

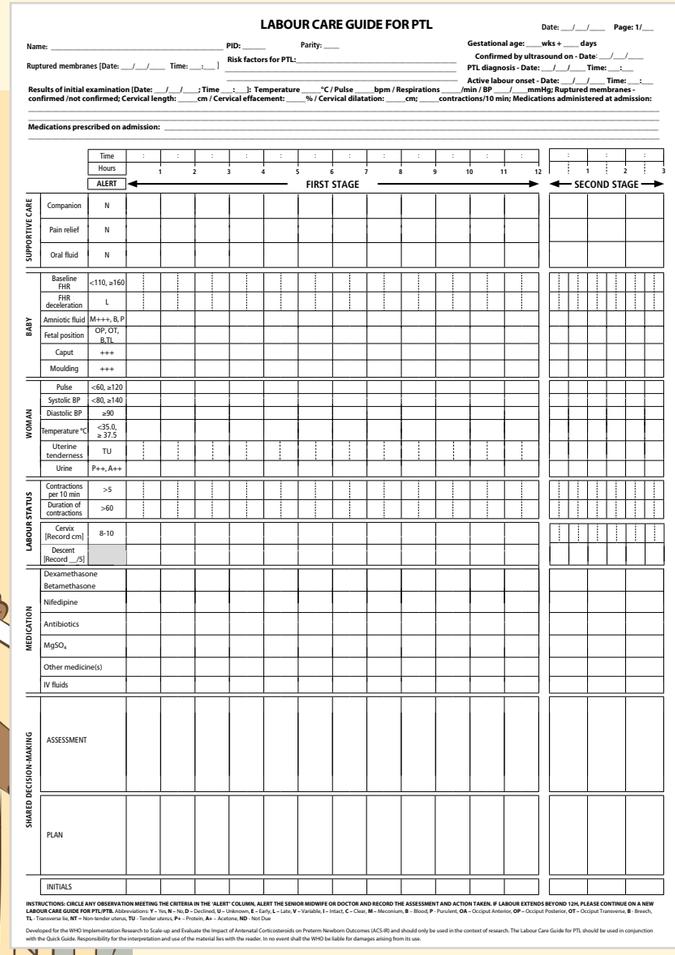
1. For referral hospitals, how can you ensure women receive all the doses of medication needed to complete treatment?

Referral hospitals ✓ Health centres ✓

## Support labour

# Use Labour Care Guide for preterm



**LABOUR CARE GUIDE FOR PTL**

Date: ___/___/____ Page: 1/___

Name: _____ PID: _____ Parity: _____ Gestational age: ____wks + ____ days

Ruptured membranes [Date: ___/___/____ Time: ___:___ ] Risk factors for PTL: _____ Confirmed by ultrasound on - Date: ___/___/____

PTL diagnosis - Date: ___/___/____ Time: ___:___

Active labour onset - Date: ___/___/____ Time: ___:___

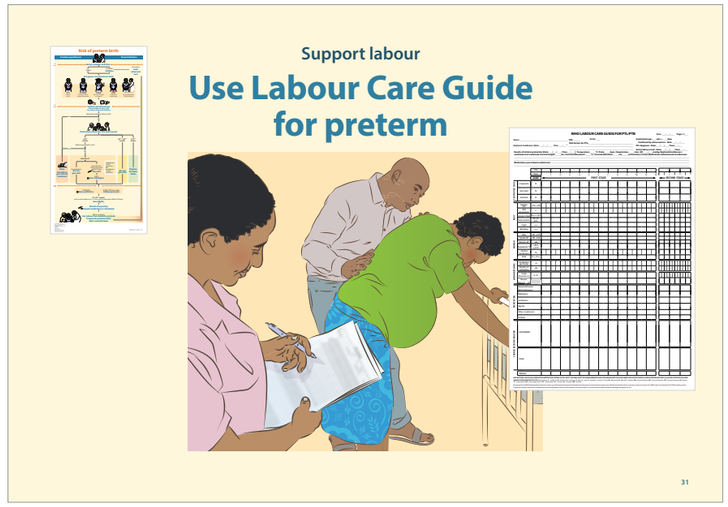
Results of initial examination [Date: ___/___/____; Time ___:___]: Temperature _____°C / Pulse _____bpm / Respirations _____/min / BP ___/___ mmHg; Ruptured membranes - confirmed /not confirmed; Cervical length: _____cm / Cervical effacement: _____% / Cervical dilatation: _____cm; _____contractions/10 min; Medications administered at admission:

Medications prescribed on admission:

| | | | Time | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Hours | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 |
| | | | ALERT | ◄ FIRST STAGE ► | | | | | | | | | | | | ◄ SECOND STAGE ► | | |
| SUPPORTIVE CARE | Companion | N | | | | | | | | | | | | | | | | |
| | Pain relief | N | | | | | | | | | | | | | | | | |
| | Oral fluid | N | | | | | | | | | | | | | | | | |
| BABY | Baseline FHR | <110, ≥160 | | | | | | | | | | | | | | | | |
| | FHR deceleration | L | | | | | | | | | | | | | | | | |
| | Amniotic fluid | M+++, B, P | | | | | | | | | | | | | | | | |
| | Fetal position | OP, OT, B,TL | | | | | | | | | | | | | | | | |
| | Caput | +++ | | | | | | | | | | | | | | | | |
| | Moulding | +++ | | | | | | | | | | | | | | | | |
| WOMAN | Pulse | <60, ≥120 | | | | | | | | | | | | | | | | |
| | Systolic BP | <80, ≥140 | | | | | | | | | | | | | | | | |
| | Diastolic BP | ≥90 | | | | | | | | | | | | | | | | |
| | Temperature °C | <35.0, ≥ 37.5 | | | | | | | | | | | | | | | | |
| | Uterine tenderness | TU | | | | | | | | | | | | | | | | |
| | Urine | P++, A++ | | | | | | | | | | | | | | | | |
| LABOUR STATUS | Contractions per 10 min | >5 | | | | | | | | | | | | | | | | |
| | Duration of contractions | >60 | | | | | | | | | | | | | | | | |
| | Cervix [Record cm] | 8-10 | | | | | | | | | | | | | | | | |
| | Descent [Record __/5] | | | | | | | | | | | | | | | | | |
| MEDICATION | Dexamethasone | | | | | | | | | | | | | | | | | |
| | Betamethasone | | | | | | | | | | | | | | | | | |
| | Nifedipine | | | | | | | | | | | | | | | | | |
| | Antibiotics | | | | | | | | | | | | | | | | | |
| | $MgSO_4$ | | | | | | | | | | | | | | | | | |
| | Other medicine(s) | | | | | | | | | | | | | | | | | |
| | IV fluids | | | | | | | | | | | | | | | | | |
| SHARED DECISION-MAKING | ASSESSMENT | | | | | | | | | | | | | | | | | |
| | PLAN | | | | | | | | | | | | | | | | | |
| | INITIALS | | | | | | | | | | | | | | | | | |

**INSTRUCTIONS: CIRCLE ANY OBSERVATION MEETING THE CRITERIA IN THE 'ALERT' COLUMN. ALERT THE SENIOR MIDWIFE OR DOCTOR AND RECORD THE ASSESSMENT AND ACTION TAKEN. IF LABOUR EXTENDS BEYOND 12H, PLEASE CONTINUE ON A NEW LABOUR CARE GUIDE FOR PTL/PTB.** Abbreviations: **Y** – Yes, **N** – No, **D** – Declined, **U** – Unknown, **E** – Early, **L** – Late, **V** –Variable, **I** – Intact, **C** – Clear, **M** – Meconium, **B** – Blood, **P** – Purulent, **OA** – Occiput Anterior, **OP** – Occiput Posterior, **OT** – Occiput Transverse, **B** – Breech, **TL** – Transverse lie, **NT** – Non-tender uterus, **TU** – Tender uterus, **P+** – Protein, **A+** – Acetone, **ND** – Not Due

Developed for the WHO Implementation Research to Scale-up and Evaluate the Impact of Antenatal Corticosteroids on Preterm Newborn Outcomes (ACS-IR) and should only be used in the context of research. The Labour Care Guide for PTL should be used in conjunction with the Quick Guide. Responsibility for the interpretation and use of the material lies with the reader. In no event shall the WHO be liable for damages arising from its use.




## Explain

Please turn to page 15 of your Provider Guide as we review the Labour Care Guide (LCG) for PTL.

### For which women?

Use the LCG for PTL to monitor care and progress of labour in women if:

- GA <37$^{+0}$ **and**
- at least 6 contractions/hr **and**
- cervical dilatation of ≥3 cm or effacement ≥75% **and**
- viability and GA confirmed by U/S.

### When to use the LCG for PTL?

- When PTL has been established according to the criteria just given.
- Even if in second stage.

### Why?

- To help you compare assessment findings to alert values to:
  - identify and manage complications quickly
  - ensure medications such as ACS and $MgSO_4$ are being given per protocol
  - identify and manage side effects of medications
  - alert the neonatal team when birth is close.
- To improve documentation.
- To ensure continuity of care between health workers and prevent medication errors.

### Where?

The LCG for PTL should be used at referral hospitals where:

- women can receive comprehensive care, including access to 24/7 caesarean birth **and**
- their preterm newborns can receive care in a neonatal unit with respiratory and other support as needed.

### What?

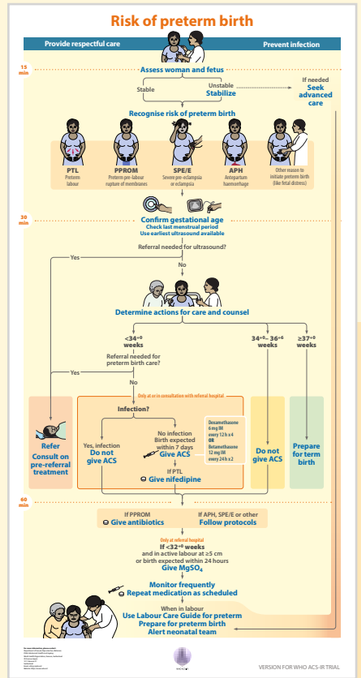
- The LCG for PTL has 7 sections:
  - client information on the start of labour
  - supportive care
  - assessment of the baby
  - assessment of the woman
  - labour status
  - medications
  - shared decision-making.

We are going to learn how to use this tool in the LCG for PTL course.

## Discuss

1. Has anyone used the WHO LCG for monitoring term women in labour?
2. What are the barriers to monitoring women closely in preterm labour?
3. How can you overcome them?

Referral hospitals ✓ Health centres ✗




## Support labour

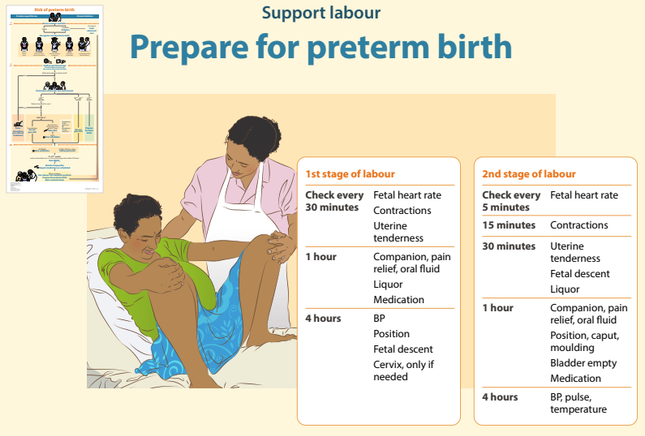
# Prepare for preterm birth

### 1st stage of labour

| | |
|---|---|
| **Check every 30 minutes** | Fetal heart rate<br>Contractions<br>Uterine tenderness |
| **1 hour** | Companion, pain relief, oral fluid<br>Liquor<br>Medication |
| **4 hours** | BP, pulse, temperature<br>Position<br>Fetal descent<br>Cervix, only if needed |

### 2nd stage of labour

| | |
|---|---|
| **Check every 5 minutes** | Fetal heart rate |
| **15 minutes** | Contractions |
| **30 minutes** | Uterine tenderness<br>Fetal descent<br>Liquor |
| **1 hour** | Companion, pain relief, oral fluid<br>Position, caput, moulding<br>Bladder empty<br>Medication |
| **4 hours** | BP, pulse, temperature |




## Facilitation note

- Walk around to the front of the Flip Chart so you can see it too. Ask a volunteer to read aloud the assessments listed in the table for the 1st stage of l abour.
- After they finish, remind the group that position and fetal descent should be assessed abdominally first, and vaginal examination should only be performed when medically indicated.
- Then ask a second volunteer to read the assessments required for the 2nd stage of labour.

# Explain

## Timing and mode

- Plan for birth when
  - labour has started, **or**
  - planned induction or caesarean.
- An obstetrician at the referral hospital should decide mode and timing of birth.
- PTL alone is not an indication for caesarean birth – regardless of cephalic or breech presentation.
- Avoid vacuum-assisted birth – high risks of intracranial bleeding in the preterams.

> Do not artificially rupture membranes to speed up labour in women on ACS.

## Intrapartum care

- Confirm fetal presentation intrapartum
  - Breech or transverse are common.
  - Transverse lie has a high risk of cord prolapse when membranes rupture – an indication for CS if in labour.
- Identify and manage obstetric and medical risk factors with implications for care such as chronic hypertension, pre-eclampsia, diabetes, etc.
- Offer supportive care, companionship, comfort measures, pain relief, oral fluids, position changes.

## Monitor and record

- Urine for protein and acetone at every void.
- Need for medications to complete courses every hour.

> **Use the LCG for PTL** to record findings and respond quickly to any danger signs or alert values.

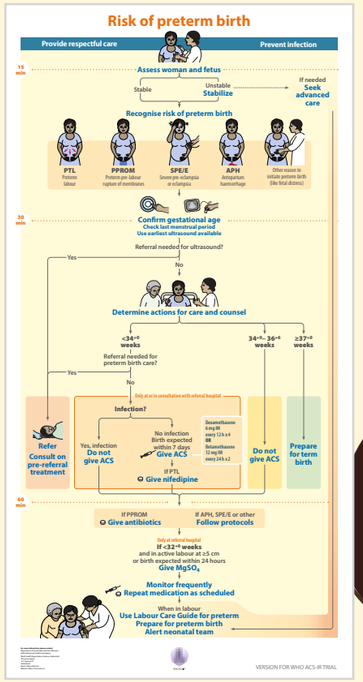
# Ask

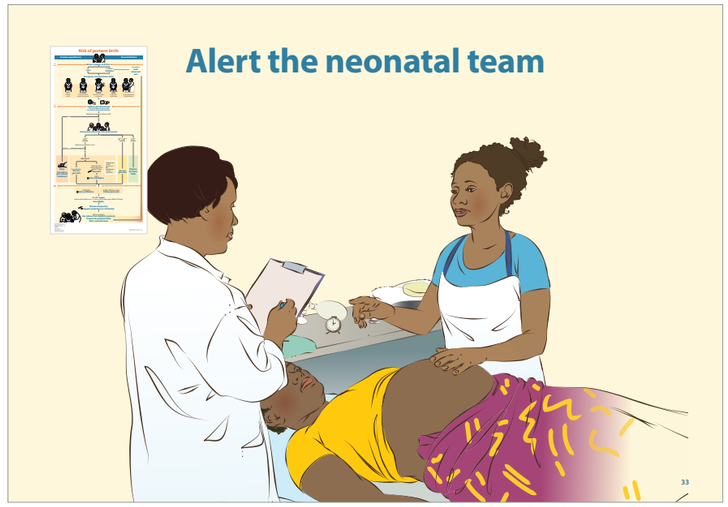
When do you start the Labour Care Guide for PTL and what is it for?

- When a woman is <37 weeks, having at least 6 contractions per hour, and her cervix is ≥3 cm dilated and ≥ 75% effaced. It is used to monitor the woman and fetus and know when to act.

Referral hospitals ✓ Health centres ✗

# Alert the neonatal team






### Facilitation note

See the WHO courses Essential Newborn Care 1 and 2 for additional information.

## Explain

Early coordination with the newborn team is essential to survival of preterm babies. Being prepared prevents problems and helps identify them early – before the baby becomes seriously ill.

### Communication with neonatal team

- The neonatal team is part of the perinatal team and should be consulted from the start.
- Alert the neonatal team:
  - as soon as a woman at high risk of PTB is admitted
  - as soon as a woman is identified to be in preterm labour, **or** when induction or planned caesarean is decided.
- When birth is imminent, alert the team again so they are ready at the bedside.
- Ensure the delivery room is ≥25 °C with no drafts.

### Plan for care of the preterm newborn

- Bag and mask resuscitation may be needed – have equipment ready including appropriately sized mask.
- Apply strict infection prevention measures.
- If immediate resuscitation is not needed, delay cord clamping for at least 1 minute after birth. This allows:
  - improved circulation
  - more red cells to the baby
  - decreased need for blood transfusion
  - lower risk of necrotizing enterocolitis and intraventricular hemorrhage
  - reduced mortality.

### Plan for care of a small baby

The neonatal team will care for the preterm baby in the NICU to provide if needed:

- Ongoing ventilation
- Respiratory support such as CPAP
- Kangaroo mother care for thermal support.
- Feeding and breastfeeding support.
- Close or continuous monitoring for signs of infection, oxygen saturation and blood glucose.

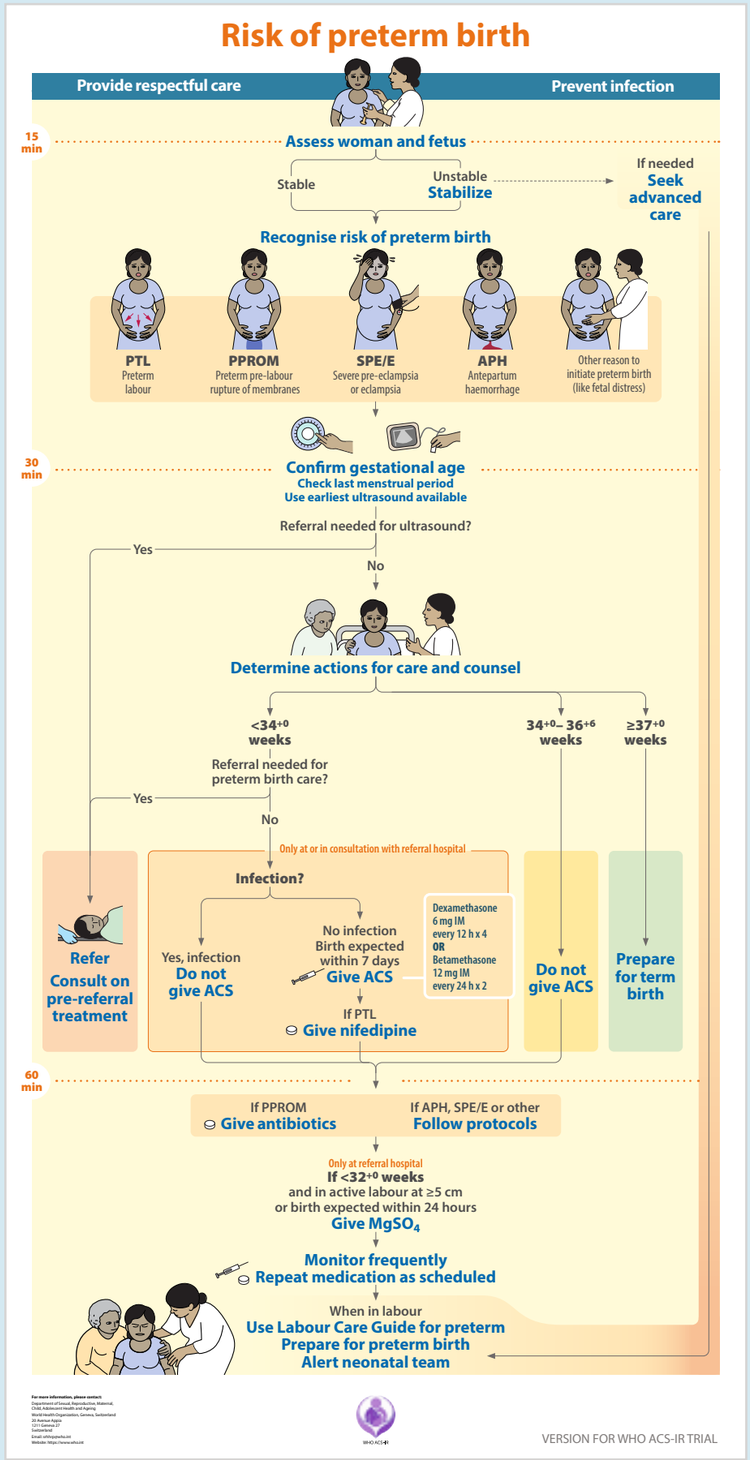
### Support the parents

- As maternity staff, you will continue care for the woman. Having a premature newborn is very stressful. Be sure to give information and ongoing support to parents and families.

## Ask

1. When must you alert the neonatal team? Name three moments.
   - When a woman first is diagnosed as at risk of PTB, when she goes into preterm labour, and when birth is imminent.

Referral hospitals ✓ Health centres ✗




# Activity 7
# Scenario practice for referral hospitals – Preparing for birth

Activity 7

# Scenario practice for referral hospitals – Preparing for birth

## 1. Prepare equipment

- See list on page 1b.

## 2. Brief

Introduce the activity clearly to prepare participants mentally and emotionally. Resolve doubts and establish a psychologically safe learning environment.

**Share the learning outcomes**

- Be prepared for preterm birth.
- Use the LCG for PTL to support and document care and act on alert values.
- Work as a team and communicate.

**Assign roles**

- Health worker 1.
- Health worker 2.
- Woman (facilitator).

**Read the case**

You are caring for Sadia who we have been following since Activity 2.

— She came in for care 2 days ago at $30^{+2}$ weeks pregnant (certain LMP, confirmed by 1st trimester U/S).
— You diagnosed her to be in PTL with intact membranes.
— She had no vaginal bleeding, no fever and no signs of SPE/E and she was admitted for high risk of PTB.
— She was given nifedipine for tocolysis and betamethasone 12 mg IM on admission.
— Contractions slowed and betamethasone was repeated 24 hours later which was yesterday.
— She is now complaining of increasing pressure and return of very painful contractions.

Provide care for Sadia. Use the Action Plan and the LCG for PTL.

**Resolve doubts**

Answer any questions participants may have.

## 3. Run the scenario

The simulation should be as realistic as possible. Use realistic equipment and encourage participants to act as they would in their real-life roles.

## 4. Debrief

The debrief after the scenario is where most learning happens. Start by establishing trust, mutual respect and a non-judgmental tone. The goal is learning, not evaluation.

**Ask participants:**

- What happened during the simulation?
  — Focus on facts and actions, not interpretations.
- What went well? What would you do differently?
  — Encourage reflection of their thought processes, emotions and decision-making.
- How can we apply these insights in the future?
  — Connect the experience to clinical practice or real-world application.
  — Highlight learnings and correct behaviours.

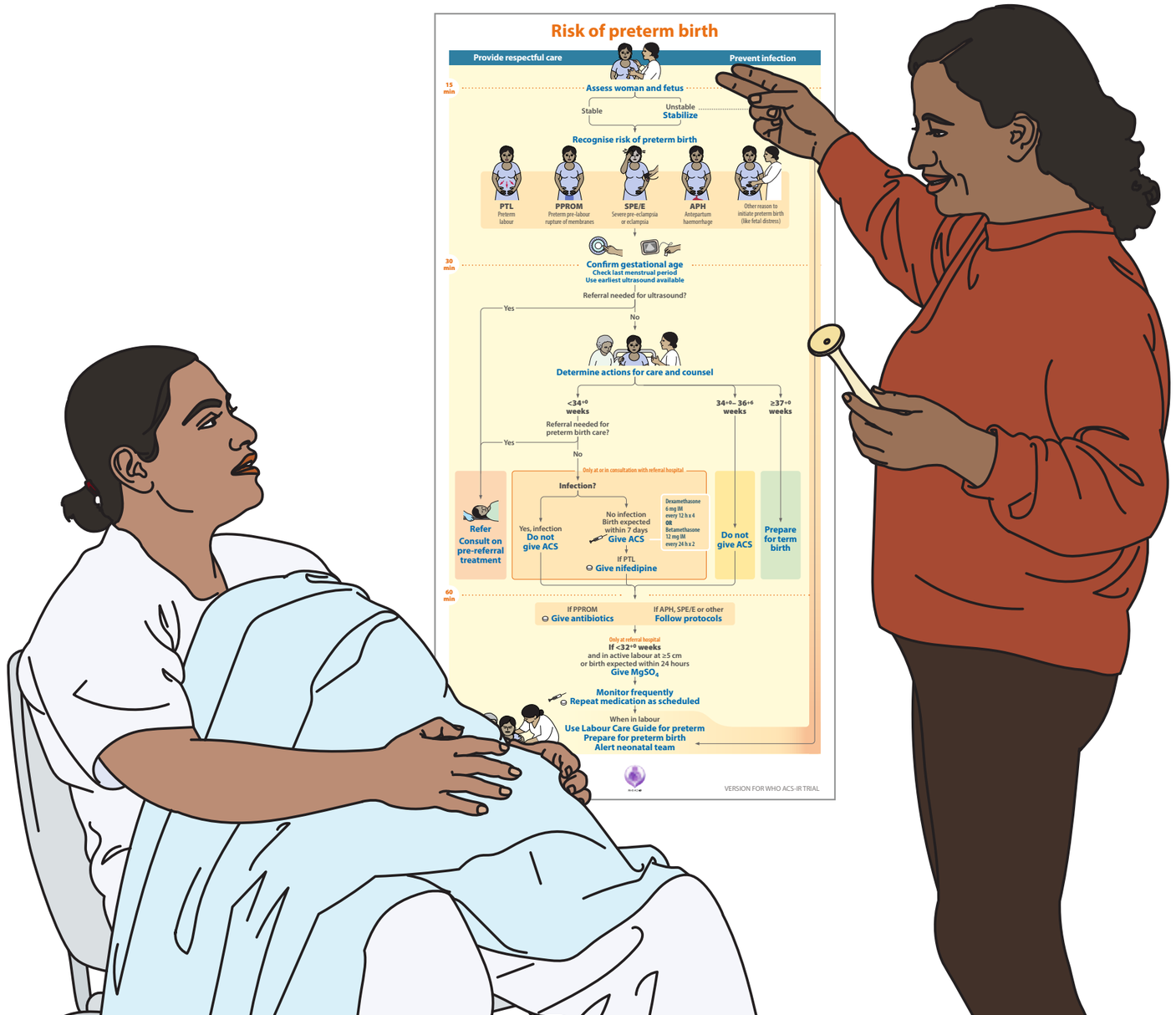
## 5. Key takeaways

- Identify active preterm labour.
- Recognize alert values.
- Alert neonatal team using SBAR.

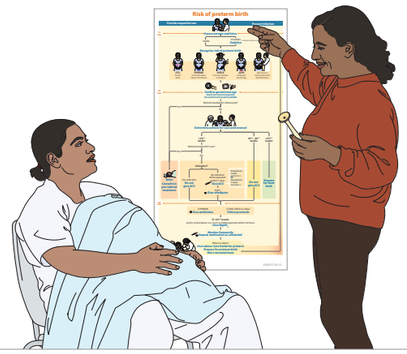
| Expected actions | Prompts and info |
|---|---|
| **Rapid assessment**<br>☐ Check cervical dilation<br>☐ Alert neonatal team | "Is there someone you need to call?"<br>• Cervix 7 cm 100% effaced. |
| **Supportive care**<br>☐ Ensure she has a companion if she wants one<br>☐ Offer pain relief<br>☐ Give oral fluid | "I am in pain, I would like my sister with me." |
| **Supportive care**<br>☐ Ensure she has a companion if she wants one<br>☐ Offer pain relief<br>☐ Give oral fluid | • FHR baseline 148.<br>• Early decelerations.<br>• Fluid clear.<br>• Occiput transverse (alert), caput +, moulding +. |
| **Woman**<br>☐ Assess vital signs<br>☐ Assess urine for protein and acetone | • Pulse 88.<br>• BP 124/76.<br>• T 37.<br>• R 18.<br>• No protein.<br>• A++ (alert). |
| **Labour status, medication, shared decision-making**<br>☐ Assess contractions<br>☐ Assess descent<br>☐ Give relevant medication<br>☐ Fill out LCG for PTL<br>☐ Create a plan and share<br>☐ Record on LCG for PTL | • 3 contractions in 10 minutes lasting 60 sec.<br>• Descent 3/5.<br>"Do I need more medication?"<br>"Is there something wrong?"<br>"Is there someone you need to call?"<br>"Can I eat something?"<br>"Can I change position?" |

Referral hospitals ✓ Health centres ✗

# Using data and ongoing practice to improve quality



## Using data and ongoing practice to improve quality

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### Facilitation note – assessments

- When you are done with this page you will move on to the post-course knowledge check and evaluation.
- Have sheets and equipment ready. See page 1b.

## Explain

### Using data to improve quality of care

- Facility data can show us what we are doing well and what needs improvement.
- Champions at your facility will share data with you monthly to see how care for women at high risk of PTB aligns with recommended interventions.
- You will review indicators such as:
  - GA by U/S for all births
  - live births <34$^{+0}$ weeks GA confirmed by U/S
  - stillbirths <34$^{+0}$ weeks
  - safe use of ACS including time to birth after ACS given
  - unsafe or non-use of ACS.
- Reviewing these and other indicators monthly will help you improve care.
- Referral forms sent by health centres and Feedback forms sent back to health centres will also be reviewed monthly.

### Ongoing practice through the Low Dose, High Frequency or "LDHF" approach

- LDHF is an approach for training that is:
  - on-site
  - hands-on
  - for the whole team
  - with ongoing activities after training.
- It ensures better retention of knowledge and skills and sustainable behavioural change.

#### Key Points of LDHF

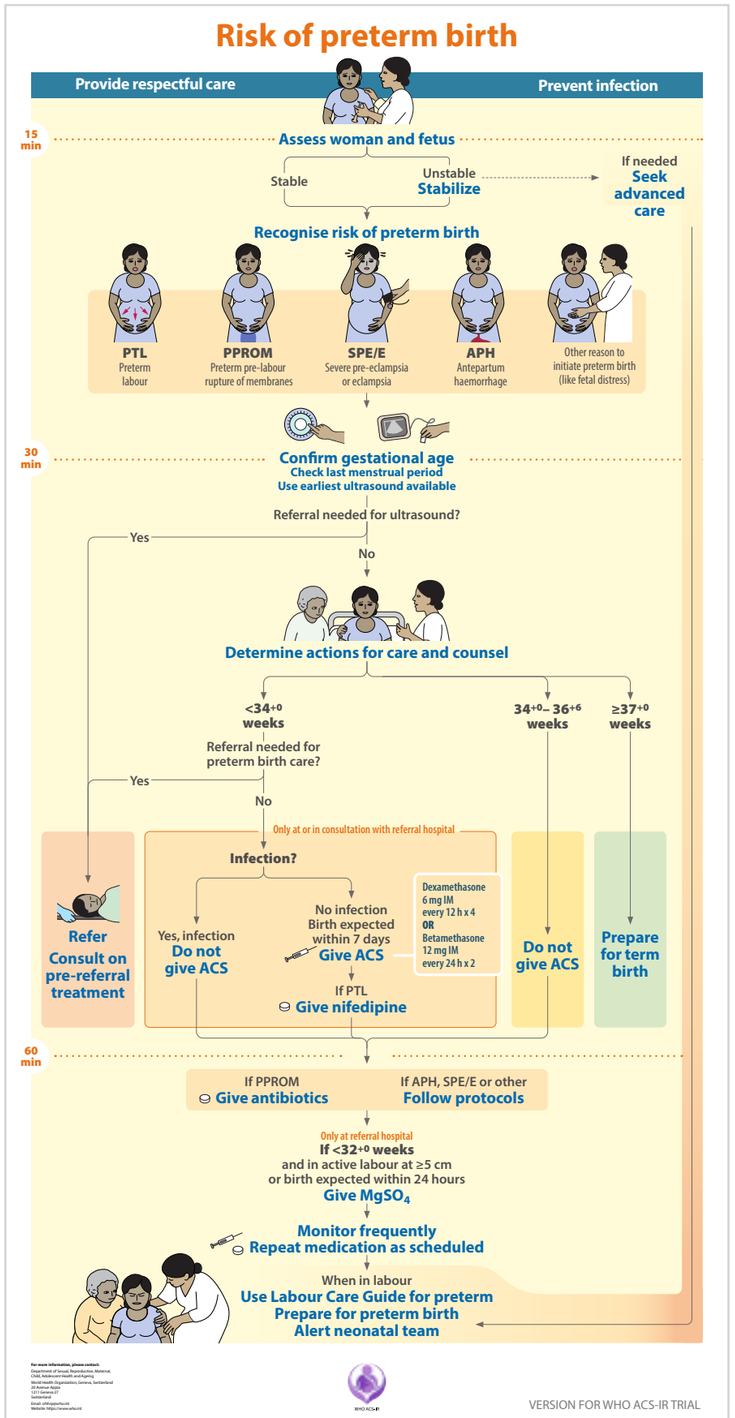
- **Competency-focused** for mastering clinical decision-making, essential skills and behaviours.
- **Case-based learning** with scenarios and hands-on practice.
- **Team and facility-based** to support multidisciplinary teamwork.
- **Brief ongoing activities** after the course:
  - clinical decision making practice cases
  - quality improvement activities such as reviewing facility indicators and outcomes to identify areas for improvement with Champions and ensuring that clinical protocols are posted
  - based on instructions outlined in the Provider Guide
  - led by Champions or peers selected from your facility.

> **Use the Provider Guide's** activities and resouces for LDHF after this course. Follow the instructions on page 19 to access digital cases on hmbs.org/case-practice/rptb.

## Discuss

- Look at the table of contents in the Provider Guide. How will you use the practice activities to improve care?

Referral hospitals ✓ Health centres ✓

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