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 Maternal and Child
Survival Program

Threatened Preterm Birth Care

A Global Curriculum

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Maternal and Child Survival Program / Jhpiego, USA



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Maternal and Child
Survival Program

survive & thrive

professional associations, private sector and global health scholars
saving mothers, newborns and children



The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

+ >30 external reviewers

Helping Mothers and Babies Survive: Threatened PTB Care



Helping Mothers Survive

Bleeding After Birth
Pre-eclampsia/eclampsia
(in progress)

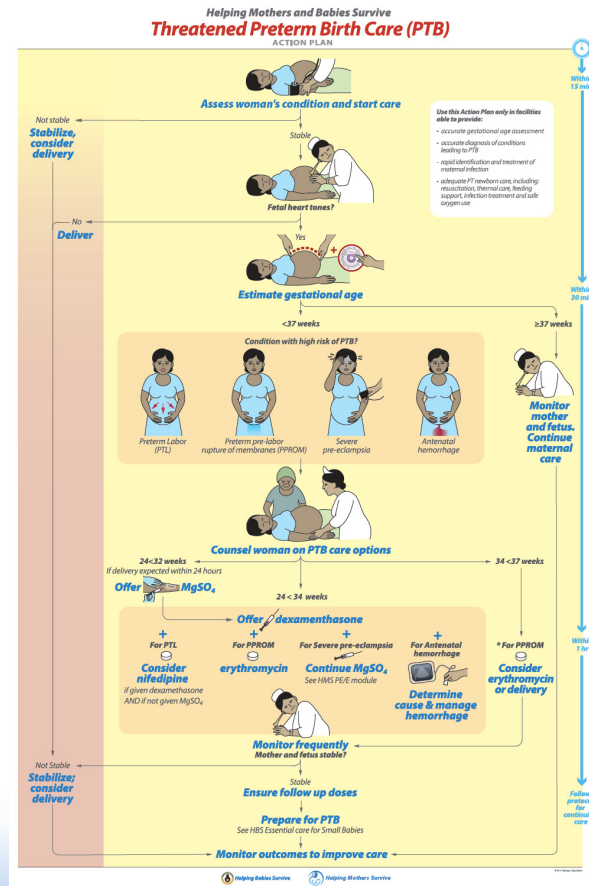
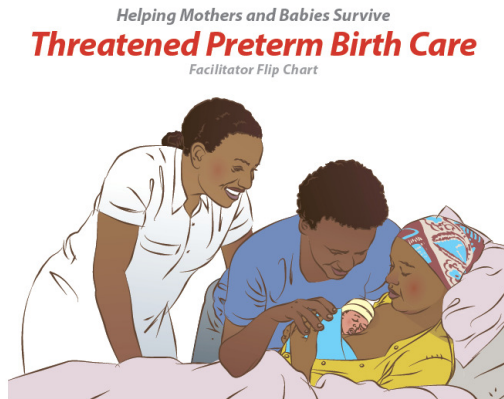


Helping Babies Survive

Helping Babies Breathe
Essential Care for Every Baby
Essential Care for Small Babies

Threatened Preterm Birth Care

Training Materials



Helping Mothers and Babies Survive
Estimate Gestational Age (GA) to manage preterm birth
JOB AID

First trimester ultrasound?

No → Certain Last Menstrual Period? (LMP)

Yes → Date by ultrasound

No → Review Fundal Height + LMP

Yes → Date by LMP

Agree within 3 weeks → Date by LMP

Differ more than 3 weeks → Access to ultrasound?

Yes → Date by ultrasound

No → Attempt to obtain additional information, then use best clinical estimate

• Always use multiple methods to estimate GA

• Measure fundal height for every woman as part of clinical assessment. Check for twins with or without ultrasound if fundal height and LMP differ > 3 weeks

If <37 weeks and birth is expected in the next 7 days, see Threatened Preterm Birth action plan

24 weeks → Prepare for possible first delivery

32 weeks → Offer MgSO₄

34 weeks → Offer dexamethasone, Offer erythromycin (PPROM) after erythromycin. For PTL, consider nifedipine. Prepare for PTB

37 weeks → For PPROM consider erythromycin versus delivery. Prepare for PTB

Prepare for term delivery

Helping Babies Survive Helping Mothers Survive

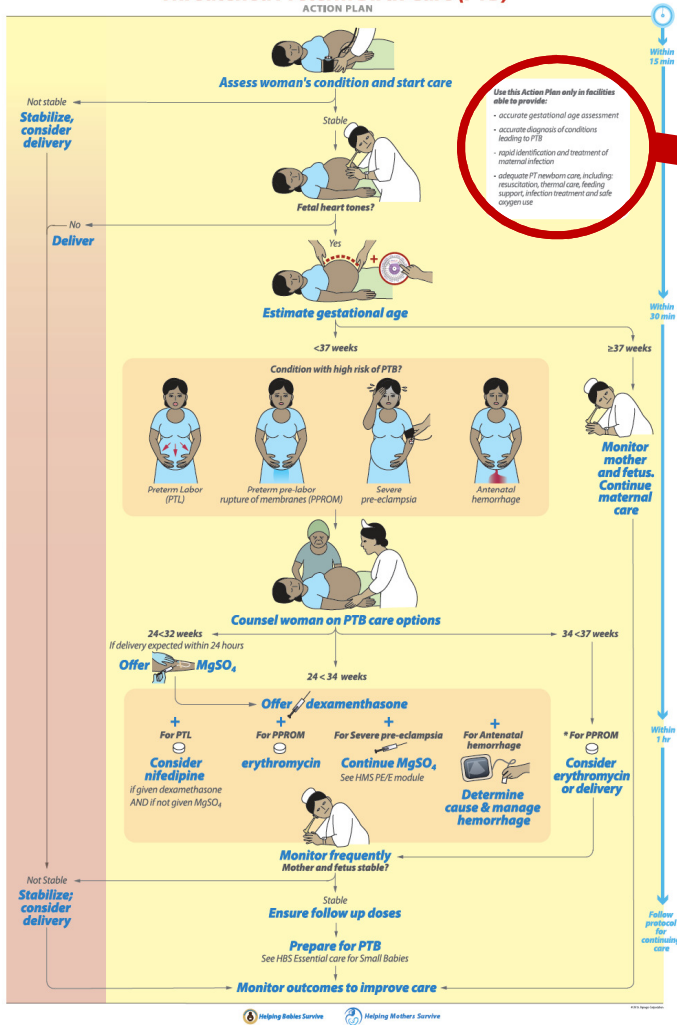
Threatened Preterm Birth Care - Medication Information

Medication	Eligibility	Benefits	Side effects and Risks	Regimen
Dexamethasone	<ul style="list-style-type: none"> High confidence GA <34 weeks High confidence likely to deliver in 7 days No suspicion of maternal sepsis or chorioamnionitis Accurate and prompt gestational care is available Resuscitation, thermal care, feeding support, infection treatment and safe oxygen use 	<ul style="list-style-type: none"> Can reduce death in preterm babies by 30% by: <ul style="list-style-type: none"> • Maturing fetal lungs • Protecting fetal intestines and blood vessels in the brain May increase risk of: <ul style="list-style-type: none"> • Maternal sepsis • Perinatal mortality in infants born at term 	<ul style="list-style-type: none"> 24 mg IM in divided doses Recommended: 12 mg IM every 12 hrs x 2 	
Repeat Dose	<ul style="list-style-type: none"> It has been >7 days since the first dose GA is still <34 weeks There is a high risk of birth within 7 days based on a new clinical assessment Patient has only received 1 prior course 	<ul style="list-style-type: none"> Benefits disappear after 7 days, repeat dose may restore More than 2 courses can be harmful to the fetus 	<ul style="list-style-type: none"> May repeat 24 mg IM in divided doses ONE time if all eligibility criteria have been met 	
Magnesium Sulfate	<ul style="list-style-type: none"> Validity <32 week GA High risk of birth in the next 24 hours No known maternal cardiac problems or myasthenia gravis Do not give maintenance doses to women with impaired renal functioning <p>Repeat dose not recommended for neuroprotection. Patients for severe pre-eclampsia continue MgSO₄ for 24 hours after birth or last seizure, whichever is later.</p>	<ul style="list-style-type: none"> Decreases the risk of cerebral palsy and motor major dysfunction Common side effects: <ul style="list-style-type: none"> • Swelling • Flushing and feeling of warmth • Nausea • Slight decrease in fetal heart rate • Respiratory or cardiac arrest related to magnesium toxicity (very rare) 	<ul style="list-style-type: none"> Loading dose: <ul style="list-style-type: none"> • 4-6 g 20% solution IM loading dose over 15-12 minutes • 10 g IM 50% solution (5g in each buttock) Maintenance Dose: <ul style="list-style-type: none"> • 2 g 50% solution IM in alternating buttocks every 4 hours x 24hrs or birth, whichever occurs first Hold if: <ul style="list-style-type: none"> • Respirations <16/min • Urinary output <120ml over 4 hours 	
Nifedipine	<ul style="list-style-type: none"> High confidence GA <34 weeks In preterm labor Has been given dexamethasone Not being given MgSO₄ No known cardiac problems Not in active labor 	<ul style="list-style-type: none"> May delay birth by 24-48 hours to get the benefit of dexamethasone as it transports patient Common Side Effects: <ul style="list-style-type: none"> • Nausea, Headache, Flushing • Heart palpitations, Dizziness • Severe hypotension • Shortness of breath 	<ul style="list-style-type: none"> Loading Dose: <ul style="list-style-type: none"> • 20 mg PO Standard release Maintenance Dose: <ul style="list-style-type: none"> • 10-20 mg every 4-8 hours for up to 48 hours Do not exceed 180 mg in 24 hours 	
Erythromycin	<ul style="list-style-type: none"> GA <37 weeks (delivery by 37 weeks) Ruptured Membranes No known allergy to erythromycin <p>Monitor closely and change to treatment protocol if signs of infection appear</p>	<ul style="list-style-type: none"> Helps prevent infection which also reduces pneumonia related problems for baby Delay delivery Disabling, Nausea, Vomiting Risk of allergic reaction 	<ul style="list-style-type: none"> 250 mg orally 4x/day for 10 days Stop antibiotics after vaginal birth Erythromycin unsuitable as penicillin. Do NOT use in case of anaphylaxis due to increased risk of anaphylaxis 	

*Repeat delay delivery for medication. Following is necessary for the safety of the mother or fetus

Helping Babies Survive Helping Mothers Survive

Helping Mothers and Babies Survive
Threatened Preterm Birth Care (PTB)
 ACTION PLAN



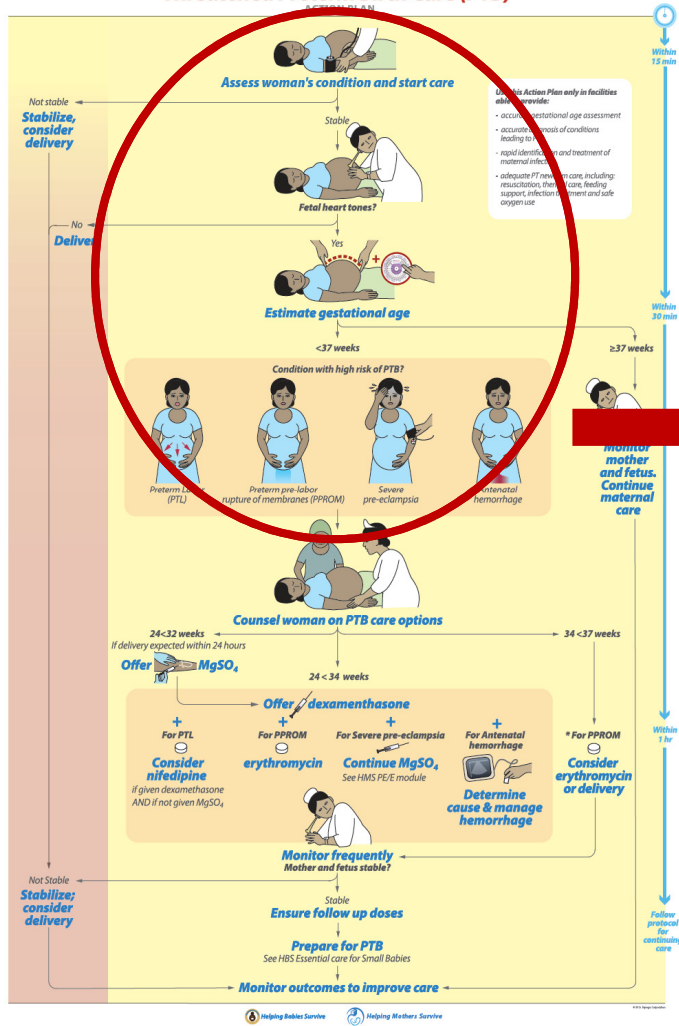
Criteria for Use of Action Plan

Use this action plan only in facilities able to provide:

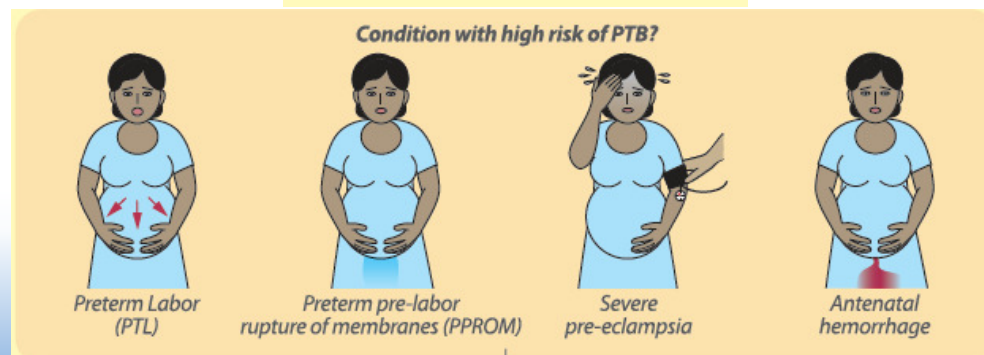
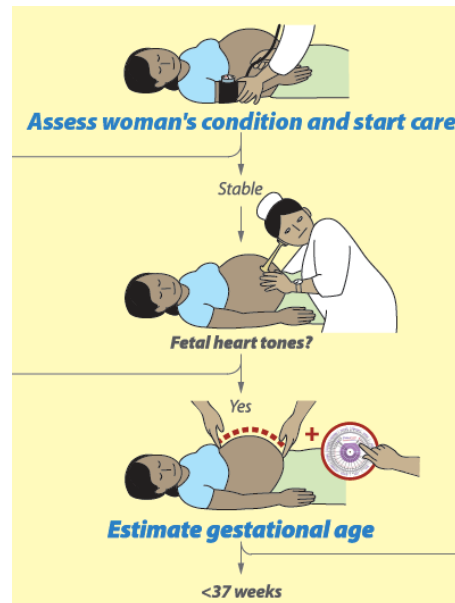
- Accurate gestational age assessment
- Accurate diagnosis of conditions leading to PTB
- Rapid identification and treatment of maternal infection
- Adequate PT newborn care, including:
 - Resuscitation
 - Thermal care
 - Feeding support
 - Infection treatment
 - Safe oxygen use

Why?...Safe use of Antenatal Corticosteroids

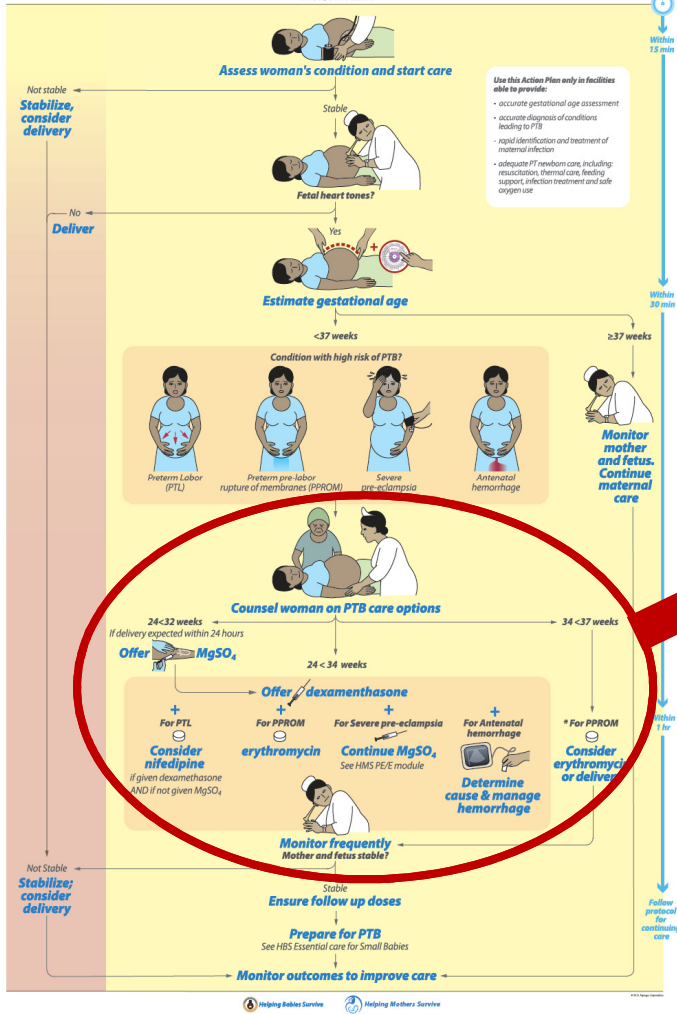
Helping Mothers and Babies Survive
Threatened Preterm Birth Care (PTB)



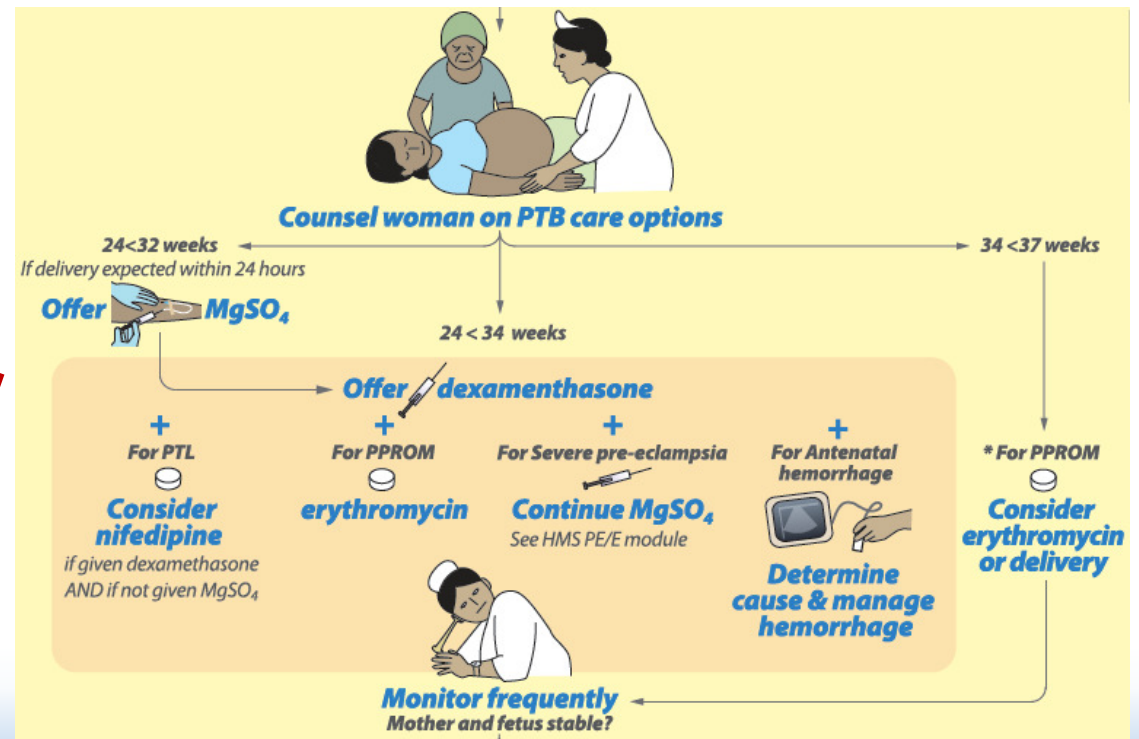
Assess: mom, baby, GA, condition leading to PTB



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Threatened Preterm Birth Care (PTB)
ACTION PLAN

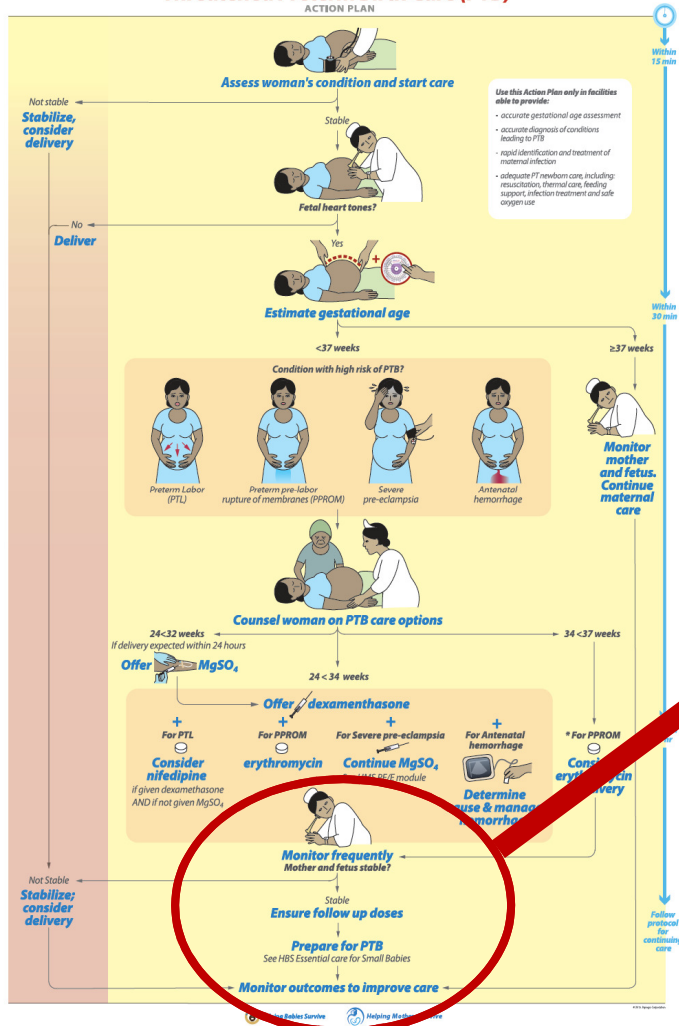


Offer care: dependent on GA and condition

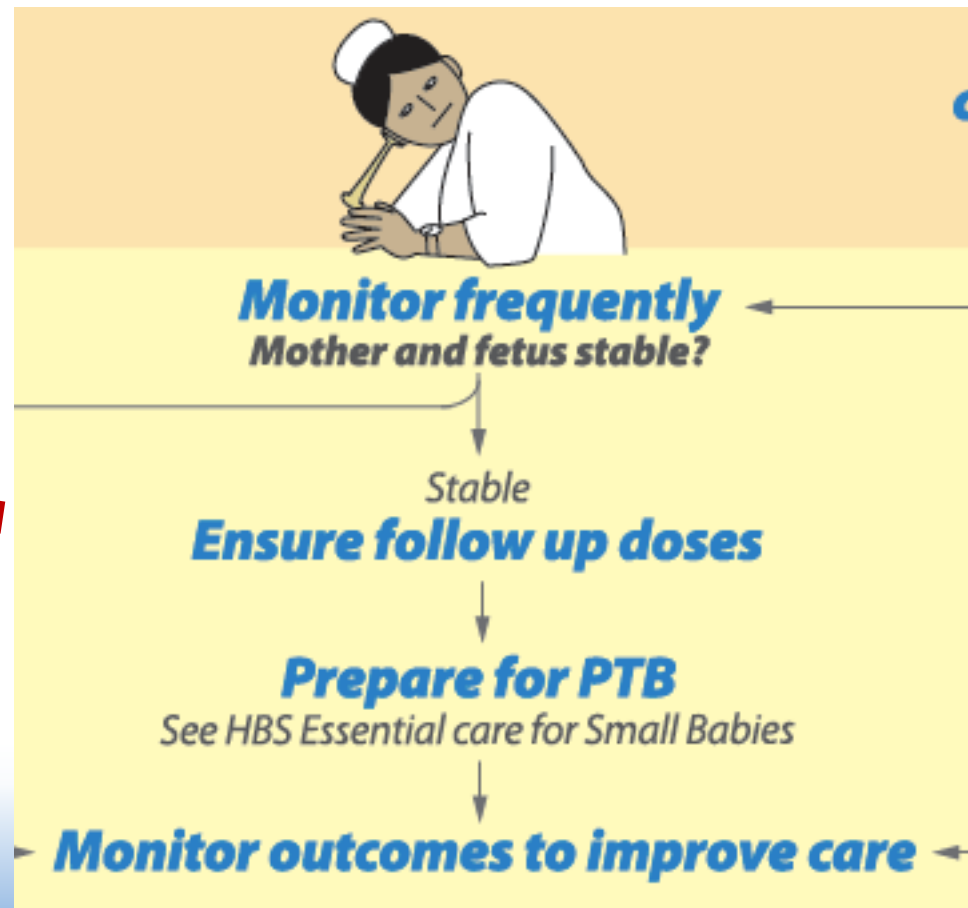


Helping Mothers and Babies Survive
Threatened Preterm Birth Care (PTB)

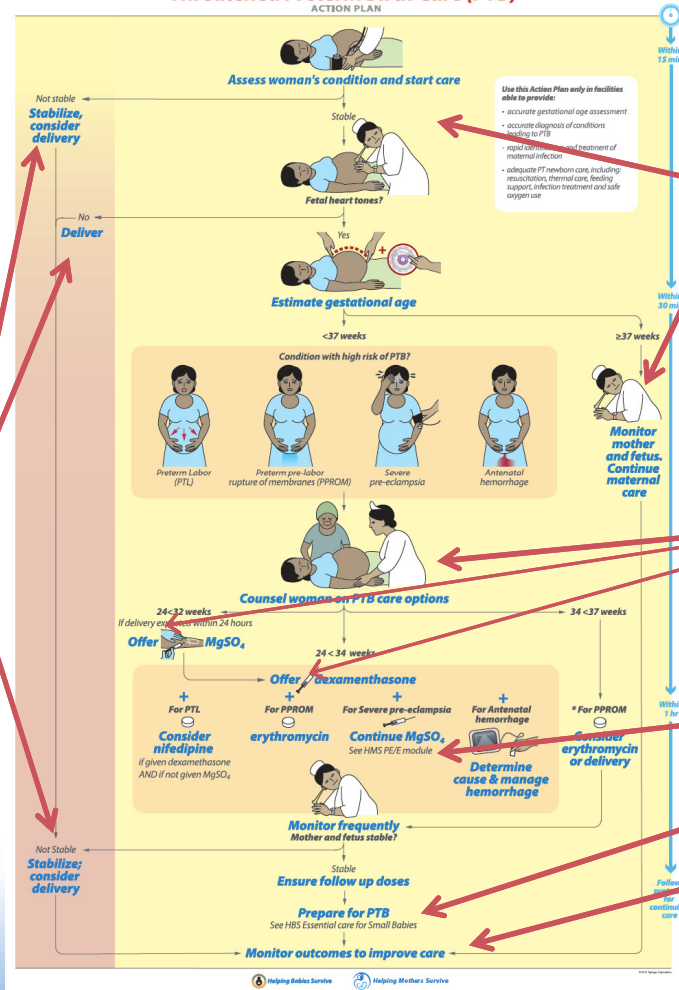
ACTION PLAN



Follow up



Helping Mothers and Babies Survive
Threatened Preterm Birth Care (PTB)
ACTION PLAN



Additional Concepts

Care for Woman

- Don't forget mom in quest to save baby
- She requires maternal care for most conditions leading to PTB

Counseling

- “Offer” not “Give”

Tie-ins to other modules

- HMS: Pre-eclampsia/ Eclampsia
- HMS: Essential Care for Small Babies

Quality Improvement

Deliver if unstable


A photograph of two women sitting and talking. The woman on the left is wearing a green and white patterned top and a gold necklace. The woman on the right is wearing a brown and white patterned top, glasses, and a colorful wristband. They are in an indoor setting with a red wall and a dark door in the background.

Photo credit: MCSP






Field Testing: Kogi State, Nigeria

August 31th – September 4th

Key Findings: Materials

Need for Medication Chart

Threatened Preterm Birth Care - Medication Information

	Eligibility	Benefits Side effects and Risks	Regimen
Dexamethasone for lung maturity 	<ul style="list-style-type: none"> • High confidence GA <34 weeks • High confidence likely to deliver in 7 days • No suspicion of maternal sepsis or chorioamnionitis • Advanced preterm postnatal care is available: resuscitation, thermal care, feeding support, infection treatment and safe oxygen use 	Can reduce death in preterm babies by 30% by: <ul style="list-style-type: none"> • Maturing fetal lungs • Protecting fetal intestines and blood vessels in the brain May increase risk of: <ul style="list-style-type: none"> • Maternal sepsis • Perinatal mortality in infants born at term 	24 mg IM in divided doses Recommended: 12 mg IM every 12 hrs x 2
Repeat Dose 	<ul style="list-style-type: none"> • It has been >7 days since the first dose • GA is still <34 weeks • There is a high risk of birth within 7 days based on a new clinical assessment • Patient has only received 1 prior course 	<ul style="list-style-type: none"> • Benefits disappear after 7 days, repeat dose may restore • More than 2 courses can be harmful to the fetus 	May repeat 24 mg IM in divided doses ONE time if all eligibility criteria have been met
Magnesium Sulfate for neuroprotection 	<ul style="list-style-type: none"> • Viability <32 weeks GA • High risk of birth in the next 24 hours • No known maternal cardiac problems or myasthenia gravis • Do not give maintenance doses to women with impaired renal functioning <i>Repeat dose not recommended for neuroprotection. If patient has severe pre-eclampsia continue MgSO₄ for 24 hours after birth or last seizure, whichever is later.</i>	<ul style="list-style-type: none"> • Decreases the risk of cerebral palsy and motor major dysfunction Common side effects: <ul style="list-style-type: none"> • Sweating • Flushing and feeling of warmth • Headache • Nausea • Slight decrease in fetal heart rate Risks: <ul style="list-style-type: none"> • Respiratory or cardiac arrest related to magnesium toxicity (very rare) 	Loading dose: <ul style="list-style-type: none"> • 4 g 20% solution IV loading dose over 10-15 minutes • 10 g IM 50% solution (5g in each buttock) Maintenance Dose: <ul style="list-style-type: none"> • 5 g 50% solution IM in alternating buttocks every 4 hours x 24hrs or birth, whichever occurs first Hold if: <ul style="list-style-type: none"> • Respirations <16/minute • Patellar reflex absent • Urinary output <120mL over 4 hours
Nifedipine to slow or stop contractions and delay birth 24-48 hours 	<ul style="list-style-type: none"> • High confidence GA <34 weeks • In preterm labor • Has been given dexamethasone • Is not being given MgSO₄ • No known cardiac problems • Not in active labor 	<ul style="list-style-type: none"> • May delay birth by 24-48 hours to get the benefit of dexamethasone or to transport patient Common Side Effects: <ul style="list-style-type: none"> • Nausea, Headache, Flushing • Heart palpitations, Dizziness Risks: <ul style="list-style-type: none"> • Severe hypotension • Shortness of breath 	Loading Dose: 20 mg PO Standard release Maintenance Dose: 10-20 mg every 4-8 hours for up to 48 hours Do not exceed 180 mg in 24 hours
Erythromycin for PPROM to prevent infection and delay birth 	<ul style="list-style-type: none"> • GA <37 weeks (deliver by 37 weeks) • Ruptured Membranes • No known allergy to erythromycin <i>Monitor closely and change to treatment protocol if signs of infection appear</i>	<ul style="list-style-type: none"> • Helps prevent infection which also reduces prematurity related problems for baby • Delays delivery <ul style="list-style-type: none"> • Diarrhea, Nausea, Vomiting • Risk of allergic reaction 	250 mg orally 4x/day for 10 days Stop antibiotics after vaginal birth <i>If erythromycin unavailable use a penicillin. Do NOT use co-amoxiclav/augmentin due to increased rates of necrotizing enterocolitis</i>

*Never delay delivery for medication if delivery is necessary for the safety of the mother or fetus



Helping Babies Survive



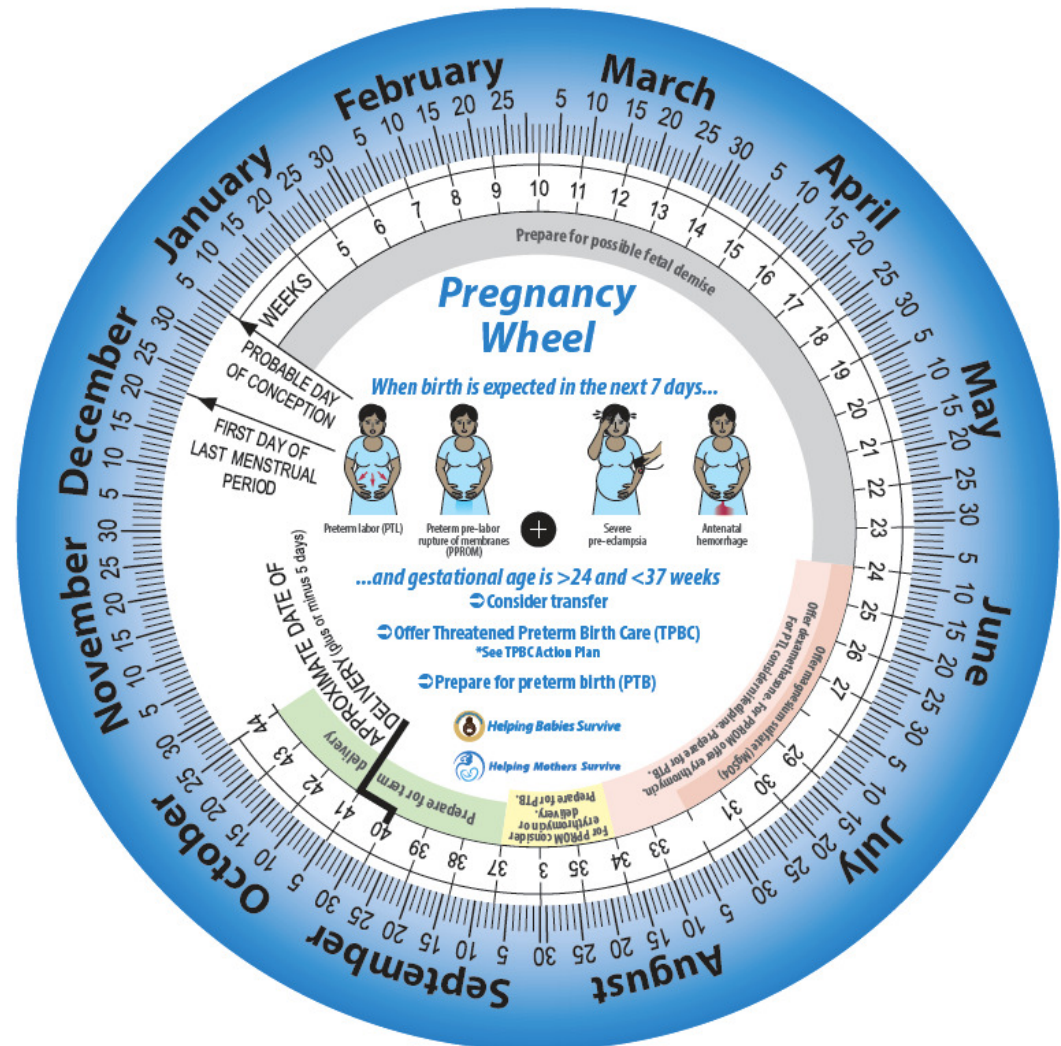
Helping Mothers Survive

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Key Findings: Gestational Age (GA)

- GA wheels not widely available but desired
- Job aid easy to follow; case studies useful
- Late entry to ANC key barrier for GA accuracy



Key Findings: Interventions

- ACS already in use; not all sites meet WHO criteria
 - Adequate preterm newborn care biggest gap
 - GA challenge with >50% of patients
- Ob-Gyn residents knowledgeable about MgSO₄ for neuro-protection
 - Supply, cost, and staffing for monitoring are barriers to use
- Inappropriate antibiotics currently in use for PPRROM
 - Co-Amoxiclav; Metronidazole

Key Findings: Audience

- Team training valuable: “Now we understand where the others are coming from”
 - Requires attention to power dynamics; caution in assuming baseline knowledge
 - High level of interest in perinatal teams
- Materials for lower-level facilities desired
 - TPTB recognition, stabilization and referral

Module Completion

- Field testing and external reviewers' final edits have been incorporated
- Copy edit has been completed
- Awaiting final formatting polish
- Upload materials to <http://reprolineplus.org/>
 - Freely available; adaptable

For more information, please visit
www.mcspprogram.org

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