GUIDELINE ON MANAGEMENT OF HIGH RISK PREGNANCY ASSAM

National Health Mission, Assam

AN INITIATIVE BY
NATIONAL HEALTH MISSION, ASSAM

GUIDELINE ON MANAGEMENT
OF HIGH RISK
PREGNANCY, ASSAM

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MESSAGE

Reduction of maternal deaths and infant deaths are one of the major goals of National Health Mission. Most of the complications or maternal deaths occur amongst the high risk pregnant women. Hence identification, treatment, follow-up and management of high risk pregnancy cases are of utmost importance or rather strategies of National health mission, Assam.

I am extremely happy that maternal health division in collaboration with technical expertise from WHO- India and BCC cell and NHM Assam has taken this innovative initiative for establishing a methodical system of follow-up, treatment and management of identified high risk pregnancy cases in a more structured manner by reducing delay factor in referral, reducing the number of referrals at every level and resulting into providing not only hassle free service to the beneficiaries but also safe and successful follow up and delivery.

I am certain that this reference manual would serve as a quick reference for service providers, from primary up to secondary level as treatment protocol for the identified high risk pregnancy cases and also to the programme officials for management of identified high risk pregnant cases. This system will in fact go a long way in strengthening the already existing micro-birth planning.

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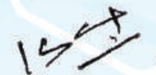
FOREWORD

Assam has been successful in reducing maternal and infant deaths over the years by adopting various strategies at different times. However, during the several times of state level Swasthya Manthan held in the financial year 2022-2023 by National Health Mission Assam with support from Department of Health & Family Welfare it became pertinent to strengthen the existing micro birth plan if the state has to reduce the desired number of maternal and infant deaths.

This reference manual is the result of efforts of Maternal Health Division and BCC cell of National Health Mission, Assam. I thank Dr. Abu Hasan Sarkar from WHO-India and Jenita K, Jhpiego for the technical support and Sikha Borthakur for her constant engagement in bringing out this booklet. I am sure this guideline will be helpful inplacing a methodical system of identification, treatment, follow-up and management of all pregnancy cases with special emphasis on high riskones.

I am hopeful that this techno-managerial manual will empower program managers and service providers to strengthen the micro birth planning system and thus bring about reduction in maternal and infant deaths in the state.



Dr. Khalekuz Zaman

Abbreviations used

HR: High Risk
HRPW: High Risk Pregnant Woman
GDM: Gestational Diabetes Mellitus
BOH: Bad Obstetric History
LMP: Last Menstrual Period
USG: Ultra Sonography
NFHS: National Family and Health Survey
NHP: National health portal
RCH: Reproductive and Child Health
Rh: Rhesus
Hb: Hemoglobin
UPT: Urine pregnancy test
P/V: Per vaginum
PPH: Post partum hemorrhage
HTN: Hypertension
TB: Tuberculosis
T: Test
Cm: Centimeter
ANM: Auxiliary Nurse Midwife
CHO: Community Health Officer
HE: Health Educator
PHC Primary Health Centre
DH: District Hospital
HWC: Health and wellness centre
IM: Intravenous
Yrs: Years
ALT: Alanine transaminase
LDH: Lactate Dehydrogenase
KFT: Kidney function test
DFMC: Daily fetal movement count
OGTT: Oral glucose tolerance test
PPBS: Post prandial blood sugar
FBG: Fasting blood glucose
Mg/dl: Milligram per deciliter
HRP: High Risk Pregnancy
PIH: Pregnancy Induced Hypertension
APH: Ante Partum Hemorrhage
IUGR: Intra Uterine Growth Retardation
EDD: Expected date of Delivery
MMR: Maternal Mortality Ratio
SRS: Sample Registration Survey
ANC: Antenatal check up
HIV: Human Immunodeficiency Virus
BP: Blood Pressure
MCP: Mother and child protection card
H/O: History of
GA: Gestational age
LSCS: Lower section caesarian section
DM: Diabetes Mellitus
C: Control
BMI: Body Mass Index
MO: Medical Officer
ASHA: Accredited Social Health Activist
BEE: Block Extension Educator
IFA: Iron and folic acid
CHC: Community Health Centre
FRU: First Referral unit
SC: Sub-centre
IM: Intramuscular
Kg: Kilogram
AST: Aspartate transaminase
RFT: Renal function test
MgSO4: Magnesium Sulphate
DTR: Deep tendon reflex
FBS: Fasting blood sugar
PPPG: Post prandial plasma glucose
Kcal/Kg: Kilocalorie per kilogram
PW: Pregnant woman
SGOT: Serum glutamic oxaloacetic transaminase
SGPT: Serum glutamic pyruvic transaminase
PMSMA: Pradhan Mantri Surakshit Matritva Abhiyaan
VHSND: Village Health Sanitation and Nutrition day
ICDS: Integrated Child Development Services scheme
TSH: Thyroid Stimulating hormone

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PART-A
(For technical and managerial staff)

INTRODUCTION:

With the recently published SRS 2019-20, the goal of National Health Policy to reduce MMR to 100/lakh live births by 2020 in India has been achieved. India strives to achieve the global SDG target to reduce MMR less than 70 per 100000 live births by 2030.

Many high-risk factors responsible for maternal mortality have their roots in the antenatal period. Also, 25% of maternal mortality occurs in the antenatal period resulting from high risk factors directly linked to pregnancy. The only effective approach to reducing the mortality and morbidity resulting from these conditions is identifying high-risk factors early and ensuring timely referral and efficient management throughout pregnancy before their descent into a critical stage. However as per NFHS-5, only half (50.7%) of women had at least 4 antenatal visits.

In Assam, as per latest SRS 2019-2020, the MMR is 195 per one lakh live birth as compared to the national average of 97. The prevalence of anemia in pregnant women is 54.2%. With perspective of north eastern hilly state, in Assam an average of around six lakhs live births occurredduring the year 2021-2022 (HMIS). Assuming a 20% incidence of high risk pregnancies, amongst these, it may be estimated that the number of high risk pregnancies would be about 1.2 lakh in the same year.

As per National health Profile (NHP-2019), In India about 20-30% of the total pregnancies belong to High Risk group and this high risks group accounts to 75% of perinatal morbidity and mortality

Currently, routine ANC, PMSMA day, VHSND sessions are the platforms to detect high risk pregnancies. However, systematic strengthening and uniform capacity building is a felt need across various categories of service providers.

CALCULATION OF EXPECTED DATE OF DELIVERY (EDD)

Step-1: Ask for the first date of her Last Menstrual Period (LMP)

Step-2: If the woman does not remember the first date of her Last Menstrual Period, encourage her to remember some major festival and/or event. Estimate LMP accordingly

Step-3: If the LMP is known, Expected Date of Delivery (EDD) can be estimated using the following formula

EDD = LMP + 9 months + 7 days

Step-4: If no details of LMP is available, use ultrasonography: if early pregnancy USG is available and feasible.

Step-5: Write the LMP and the calculated EDD in the MCP card, RCH register.

HIGH RISK PREGNANCY CONDITIONS

Definition: A high risk pregnancy is one in which the life or health of the mother or fetus is jeopardized or endangered by a disorder coincidental with or unique to pregnancy. The risk factors may be pre-existing prior to or at the time of ante natal visit or may develop subsequently in the ongoing pregnancy.

The conditions which are considered as High Risk Pregnancy are as follows:

1. Women who have delivered by caesarean section earlier
2. Pregnancy with severe anemia (Hb less than 7gm/dL)
3. Pregnancy Induced Hypertension (BP more than or equal to 140/90mm Hg)
4. Antepartum hemorrhage
5. Bad obstetric history (abortion/stillbirth/IUD/APH/PPH etc. in previous pregnancy)
6. Mal presentation
7. Multiple pregnancy
8. Grand multipara (more than or equal to 5 pregnancies)
9. Elderly primi (more than or equal to 35 years of age in first pregnancy)
10. Early primi (less than or equal to 19 years in first pregnancy)
11. Short stature (height less than 145 cms.)
12. Pregnancy with HIV/Syphilis/Hepatitis B
13. Rh Negative mother
14. Gestational Diabetes Mellitus (GDM)
15. Hypothyroidism
16. Polyhydramnios
17. Oligohydramnios
18. Any other pre existing systemic disease

SCREENING OF EVERY PREGNANT WOMEN

Every woman once confirmed as pregnant must be screened for any high risk condition. This screening may be done during routine ANC session or during PMSMA or ePMSMA sessions. Some women may have one single condition of high risk and some may have more than one. Also, it should be always kept in mind that a pregnant woman who does not have a high risk condition in the present screening may develop some condition of high risk at any point during the course of her pregnancy.

The format placed at Annexure-I is to be used to screen all pregnant womenand also may be used as a high risk follow up card. Monthly follow up of High Risk cases may be done using format placed at Annexure-IV.

Every institution from HWC to DH must maintain a HRP register and should be regularly updated. Format for HRP register is placed at Annexure-III.

BIRTH MICRO PLAN

Birth micro plan is a tool to systematically record all the details of a particular pregnant woman for Birth Preparedness and Complication Readiness (BPCR). This tool is to be prepared by CHO/ANM in close discussion with MPW.

The format placed at Annexure-II should be utilized for both high risk and non high risk pregnant women.

Process for the micro-birth plan of high-risk pregnant women

- On identification of High Risk Pregnancy cases by ANM/CHO at SUB CENTRE/HWC level, a HRP follow-up Card (Annexure-IV) will be issued to the HRPW by CHOs. CHOs will be responsible to track

HRPW as per EDD and follow up as per the HRP register (Annexure-III).

- Family of PW should be counseled (as per Annexure-III)) by ASHA/ANM to open a bank account in the name of the PW to avail benefits of govt. schemes and to save money
- POKHILA team will counsel the HRPW and family for resistant cases.
- Once identified as HRP a Minimum three times ANC to be conducted by GYNAECOLOGIST/Medical officer for high risk pregnant women (Services under ePMSMA).
- In case of difficult areas where 108 vehicles do not reach, the ASHA will discuss with the VHSNC members to identify fellow villagers having vehicles so that in case of any emergency, this vehicle may be utilized for transportation of the pregnant woman to the pre identified health facility.
- In case of char (riverine area) boatman should be identified and his contact number should be available with the family of the pregnant woman.
- The registration number and contact number of vehicle and boat should be shared with office of the Deputy Commissioner and Joint DHS so that payment may be made from JSSK fund.

Role of family in Birth Preparedness & complication readiness of HRPs:

- Family birth preparedness is an important component of Ante Natal Care. Every pregnant woman should be supported in developing Family birth preparedness plan with reference to facility selection, preparation for delivery etc.

- Family birth preparedness plan should also include identification of relatives/family members who will accompany the women to hospital, entitlements of women, important mobile contact numbers of service providers, potential blood donor in case of blood transfusion requirement.
- It is important that every pregnant women and family members are made aware about danger signs during pregnancy. This complication readiness helps in timely reporting of danger signs by pregnant woman and ensure appropriate management.

ADMISSION OF HRPW FOR INSTITUTIONAL DELIVERY

A woman diagnosed with any High Risk condition should be admitted prior to the expected date of delivery depending upon the specific high risk condition. After delivery, the women should remain under observation for a minimum of 48 hours or more, if needed.

The responsibility of ensuring admission of high risk pregnant women to health facility is primarily entrusted to ASHA which should further be verified and followed up the CHO of the nearest HWC of the village. The recommendation for admitting high risk pregnant women to appropriate facility prior to their EDD is as follows.

High Risk Condition	Days prior to EDD when HRPW should be admitted for delivery	Primarily Responsible person	Appropriate facility for institutional delivery	Nodal person to ensure admission
Age </=19 years (Teenage pregnancy)	38 completed week	ASHA	Nearest functional FRU	Sectoral Medical Officer
Age >/=35 years in first pregnancy (elderly primi)	38 completed week		Nearest functional FRU	
Height <145 cm	38 completed week		Nearest functional FRU	
Severe anemia	Anytime, as needed		District Hospital/ Functional FRU with provision of blood transfusion	
PIH	37 completed weeks of gestation		Dist. Hospital/ Medical College	
Severe PIH 160/110 or protein 3+ or above	Immediately for termination of pregnancy		Dist. Hospital/ Medical College	
Malpresentation	38 completed weeks of gestation		Nearest functional FRU/ DH	
Polyhydromnios	anytime		Nearest functional FRU/ DH	
Oligohydramnios	38 completed weeks of gestation		Nearest functional FRU/ DH	
Severe oligohydromnios	Any time		Nearest functional FRU/ DH	
IUGR	38 completed weeks of gestation		Dist. Hospital/ Medical College	
GDM with complication	anytime		Nearest functional FRU with medicine specialist/DH	
Controlled GDM	38 completed weeks		District Hospital	
BOH	38 completed weeks of gestation		District Hospital	
Any other systemic disease	As prescribed by physician/ specialist		District Hospital	

Complicated cases which cannot be handled by DH/FRU needs to admitted at Medical Colleges with timely referral in coordination with the BPM of the medical college to prevent further delays and to start treatment immediately.

PART-B
(For Managerial staff)

GUIDING PRINCIPLES FOR PROGRAM MANAGERS

Whenever a woman visits any health institution or health care worker with a history of missed period then the following must be done from managerial point of view.

- Confirmation of pregnancy by HCG kit test
- If positive, registration of the pregnancy and issue of MCP card
- Preparation of micro birth plan
- Identification of any high risk condition

Responsible Officer- at different levels

- **Responsible Officer** at district level: Joint Director of Health Services
- **Responsible Officer** at block level: SDM&HO/Block in-charge
- **Responsible Officer** at Sectoral level: Sectoral Medical Officer/ MO of link PHC
- **Responsible Officer** at HWC/SC: CHO/MPW/ANM
- **Responsible Officer** at medical college: BPM of Medical College

Responsible Officerat district level

1. Joint Director of Health Services will be the responsible Officer at the district level.
2. He/she will be overall responsible for programmatic management of HRPW. From identification through coordination of management, treatment, referral and institutional delivery in their respective district
3. Taking regular updates on block/institute wise HRPWs
4. Co-ordinating inter district referrals. Eg- Timely referral of pregnant women to medical college.
5. Regular monitoring and follow up of sub district nodal persons.

Responsible Officer at block level

1. SDM&HO/block in-charge will be the responsible officer at the block level.
2. He/she will be overall responsible person for programmatic management of HRPW. From identification through coordination of management, treatment, referral, and institutional delivery in their respective blocks.
3. Taking regular updates on HWC/SC wise HRPW's
4. Regular monitoring and follow up of HWC/SC nodal persons.
5. Regularly updating and sharing the list of HRPW's to district
6. Work closely with POKHILA team for resistant cases.

Responsible Officer at Sectoral level:

1. The sector Medical Officer will be the nodal person for managing, treating and referral of high risk pregnant ladies in their respective sectors.
2. Maintain a high risk pregnancy register (Annexure-III) as per EDD
3. After analyzing the risk conditions, the Sectoral Medical Officer will identify and assign appropriate facilities for delivery of the high risk cases. The respective CHO and the family member of the high risk case will be communicated about the suggested facility for delivery.
4. The Sectoral Medical Officer will notify and inform the identified appropriate facility one month prior to EDD of the high risk cases.

Responsible Officer at HWC/SC

1. The CHO/MPW/ANM will be the nodal person for their respective HWC/SC.
2. He/She will be overall responsible person for updating line list of HRPW, coordination of management, treatment, referral and institutional delivery for the HRPW's under their respective HWC/SC
3. Regularly updating and sharing the list of HRPW's to block and district.
4. Working closely with pregnant women, ANM to prepare birth micro plan for each HRPW.
5. Maintain register (Annexure-III) of High risk Pregnant women and follow up as per EDD.
6. In case of referral, inform the identified referral institutions prior to transportation with details of pregnancy conditions as per high risk follow-up card.
7. In case of difficult areas where 108 vehicles do not reach, the CHO/ANM will discuss with ASHA and VHSNC members to identify fellow villagers having vehicles so that in case of emergency/when the woman is in labor the villager can be contacted over phone and the high risk pregnant women can be rushed to the pre-identified referral hospital for delivery. The contact number of the vehicle owner in the micro birth plan will be made available with family of the high risk pregnant woman.
8. In case of char areas boatman should be identified and his contact number should be made available with the family of the high risk pregnant woman.
9. Monthly follow up of high risk pregnant women using format placed at Annexure-IV.

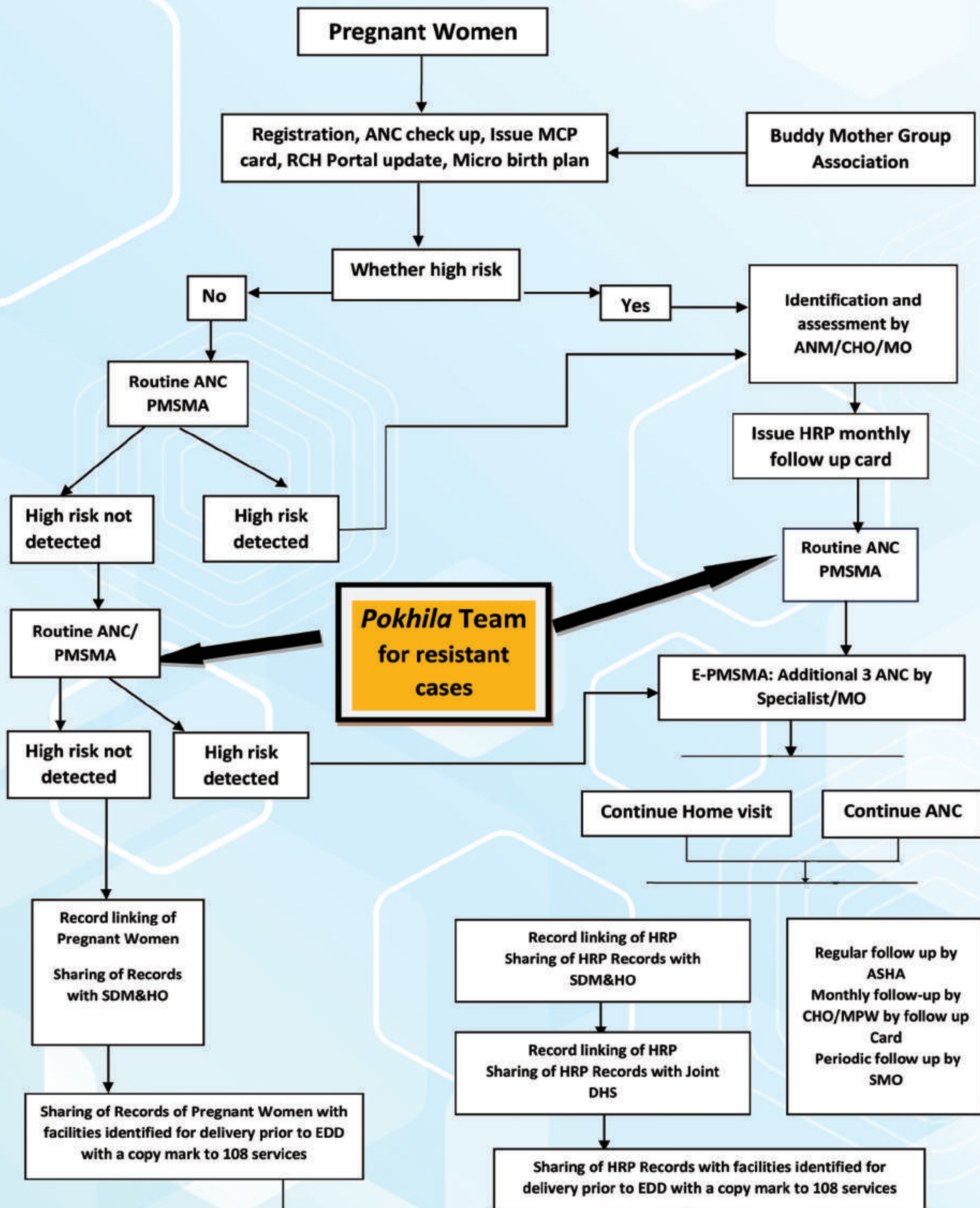
Responsible officer at Medical College

1. BPM of medical college will be responsible for coordination of HRPW's referred from other institute to medical colleges

2. He/she should closely coordinate with department of Obstetrics & Gynecology and blood bank for the referred cases.

He/She should have the line listing of HRPs from different blocks

Tracking and Process flow of Management of HRP



Incentives Related to High Risk Pregnancy

SL No	Claim condition	Who can claim	Amount of incentive
1.	Performance Based Incentive (PBI) for all sub centre ANMs in the 8 Aspirational districts for identification, line listing of severely anemic pregnant women and confirmation of Hb percentage (< 7 grm %) at PHC/CHC/SDH/DH	Sub center ANM	Rs 100 per case
2.	Performance Based Incentive for all sub centre ANMs in the 8 Aspirational districts for identification of high risk pregnancy (Hypertension, any bleeding during ANC) excluding severe anaemia	Sub center ANM	Rs 100 per case
3	ASHA incentive for institutional delivery of High Risk Pregnant Women at Public Health Institution	ASHA	Rs 100 per case
4	ASHA incentive for Identification of High Risk Mother during post partum period provision	ASHA	Rs 250 per case
5	3 additional ANC for the High Risk Pregnant women under extended PMSMA program (ePMSMA)	ASHA, High Risk Pregnant woman	Rs 100 per case per visit upto 03 visits for both ASHA and high risk pregnant woman
6	Delivery of High risk pregnant women in public health facility under extended PMSMA (ePMSMA)	ASHA	Rs 500 per case

NB: This table containing the list of incentives is restricted specifically to High Risk Pregnancies. All other routine incentives remain same.

PART-C
(For technical staff)

HOW TO PERFORM UPT (URINE PREGNANCY TEST):

The GoI has made the 'Nischay' pregnancy test kit available throughout the country. Methodology of confirmation of pregnancy using UPT kit:

Step-1: Check expiry date and read instructions of Nischay kit

Step-2: Remove the pregnancy test card from pregnancy kit

Step-3: Keep the Nischay kit on a flat surface

Step-4: Ask the women to collect some urine in the container

Step-5: Use the dropper provided in the kit to take urine from the container

Step-6: Put 2-3 drops of urine in the well-marked "S" on the pregnancy test card.

Step-7: Wait for 5 minutes.

Reading: If one red band appears in the result window "R" at 'C' (control), the pregnancy test is negative meaning that the woman is not pregnant.

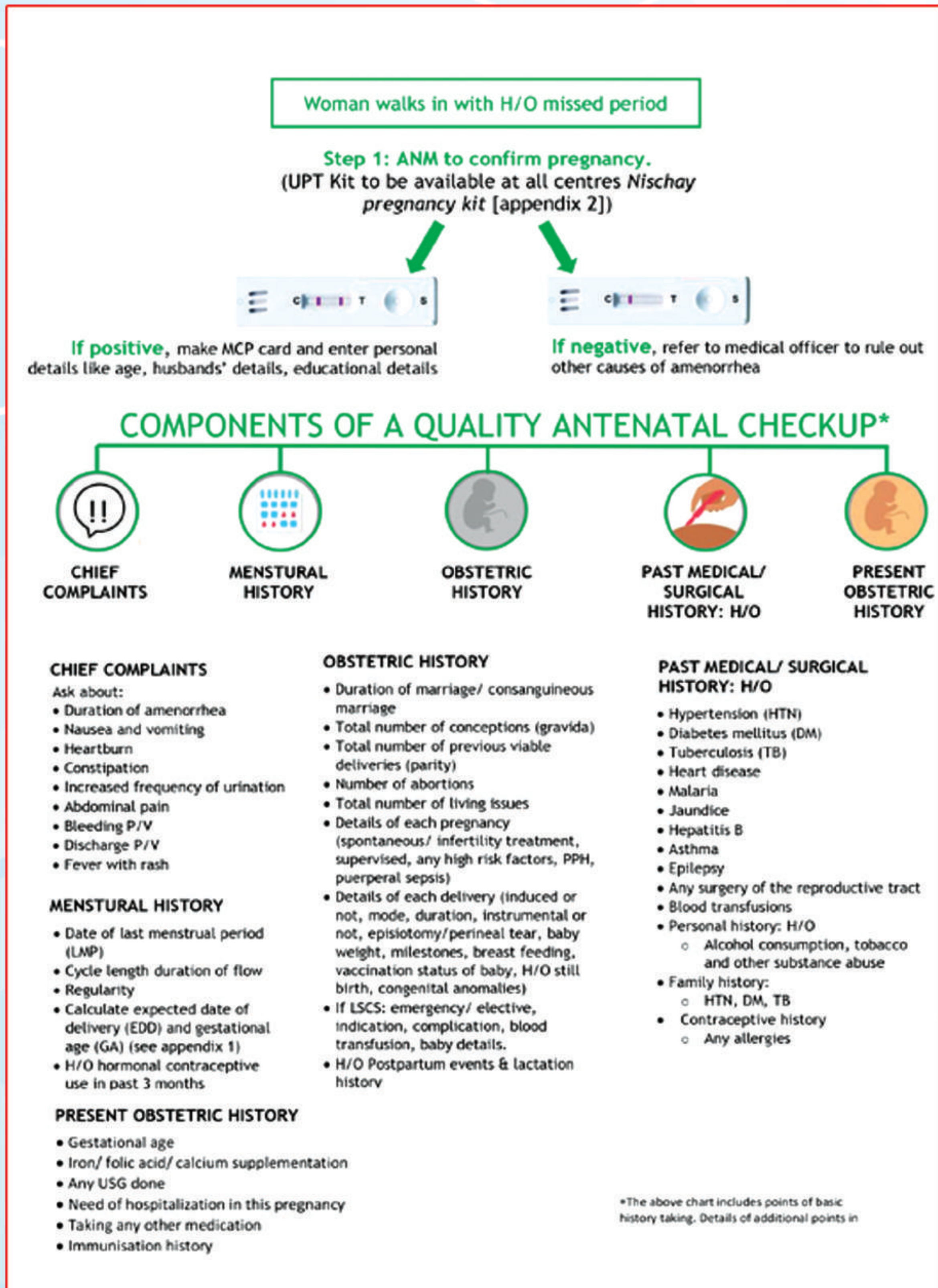
If two parallel red bands appear within 5 minutes at 'C' (Control) and at 'T' (Test), the pregnancy test is positive meaning that the woman is pregnant.

If a single line appears at "T" or no line appears at window R, then test is Invalid. In this case perform the test next morning with new Nischay kit and fresh morning sample of urine.

Step-8: If the colour of line at "T" is weaker than "C", then repeat the test after 2-3 days

Step-9: Inform the mother of the results; if positive, give the mother an MCP card and write down all the details in the MCP card.

GENERAL HISTORY TAKING



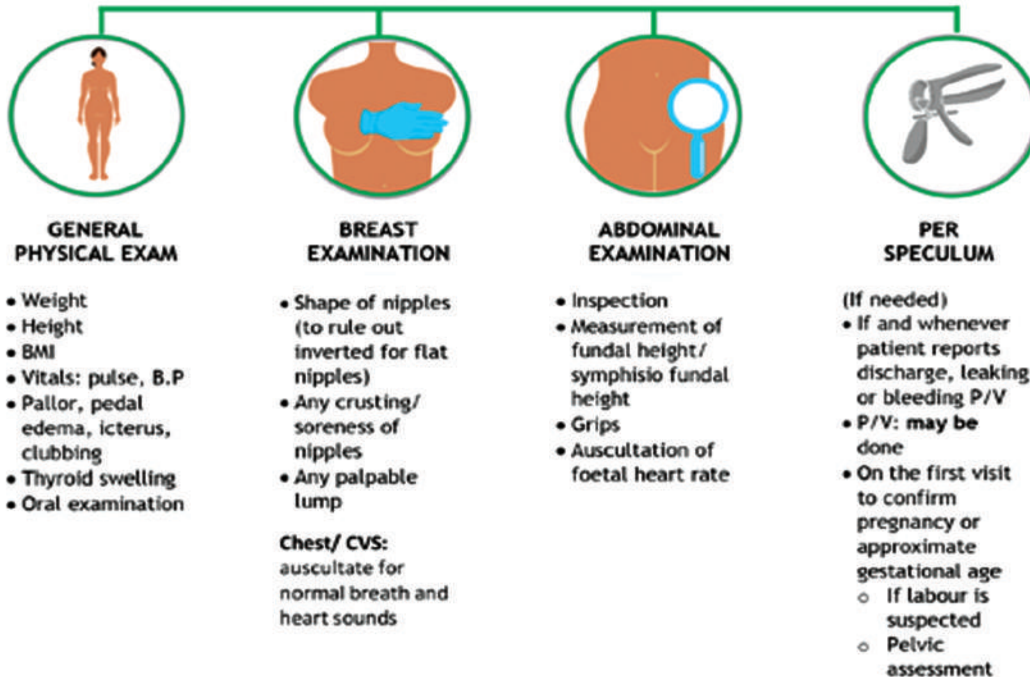
GENERAL EXAMINATION OF PREGNANT WOMEN

EXAMINATION OF AN ANTENATAL CASE

Antenatal examination can be done by:

- ANM: General physical, breast and abdominal examination.
- Medical officer: General physical, breast, abdominal and per speculum examination.

**BASIC COMPONENTS OF EXAMINATION



GENERAL PHYSICAL EXAMINATION

- Always perform general examination before systemic examination
- Take the height of woman at first ANC visit.
- Check weight of woman at every ANC visit. Normally, there should be 9-11 kg weight gain in pregnancy i.e. around 2 kg every month after first tri trimester. Look for low (< 1 Kg/month) or excessive weight gain (>3 kg/month) throughout pregnancy
- Vitals to be measured at all ANC visits. Following table describes the normal range of vitals and abnormal ranges for screening of certain clinical conditions. (Table 1)
- Various parts which need to be examined for pallor, icterus and anaemia are given in table 2.
- Calculate BMI using the formula (weight in Kg) /(height in meter)^2 . (Table 3)

S. No.	Vitals	Normal range	Screening of conditions
1.	Temperature	36.7-37.0^0 C	**Hypothermia** - shock **Hyperthermia** - fever, maternal exhaustion, infection/sepsis
2.	Pulse	60-100 beats/min	**Tachycardia** - Shock, fever, maternal exhaustion, infection/ sepsis, anaemia, heart or respiratory disease
3.	Respiratory rate	16-20 breaths/min	**Tachypnoea** - Shock, fever, maternal exhaustion, infection/ sepsis, anaemia, heart or respiratory disease
4.	BP	Around 120/80 mm of Hg	**Hypertension (≥ 140/90)** - Hypertensive disorders of pregnancy **Hypotension (Systolic <90)** – Shock

Table 1: Normal and abnormal ranges of vitals.

Hands	Pallor (anaemia), palmar erythema, koilonychias, clubbing and peripheral cyanosis *The presence of palmar erythema may be normal in pregnancy.* *Koilonychia is a sign for iron deficiency anaemia.*
Eye-Conjunctiva & Sclera	Pallor (anaemia), yellowish discoloration of sclera (jaundice), exophthalmos (thyrotoxicosis)
Mouth	Pale mucus membrane (anaemia), angular stomatitis (iron deficiency), glossitis (folate deficiency), and central cyanosis (heart disease)
Legs	Peripheral oedema *Elicited by pressing the examining finger on the skin over tibia for 10 seconds.* *Oedema over legs is physiological in pregnancy.*
Face, hands, abdomen, vulva and sacral area	Abnormal oedema (Severe pre-eclampsia)

Table 2: **Area to be examined for presence of different signs**

OBSTETRIC EXAMINATION

ABDOMINAL EXAMINATION OF PREGNANT WOMAN

Preparation for Care

- Arrange for fetoscope/stethoscope/fetal hand doppler.
- Ask the woman to empty her bladder and lie down on her back with upper part of body supported with cushions.
- Stand on the woman's right side.
- Explain the procedure to the woman
- Divert the woman's attention with conversation.
- Ensure that your hands are warm before placing them on the abdomen.
- Maintain privacy throughout examination.

COMPONENTS OF ANTENATAL EXAMINATION

INSPECTION | **PALPATION** | **AUSCULTATION**

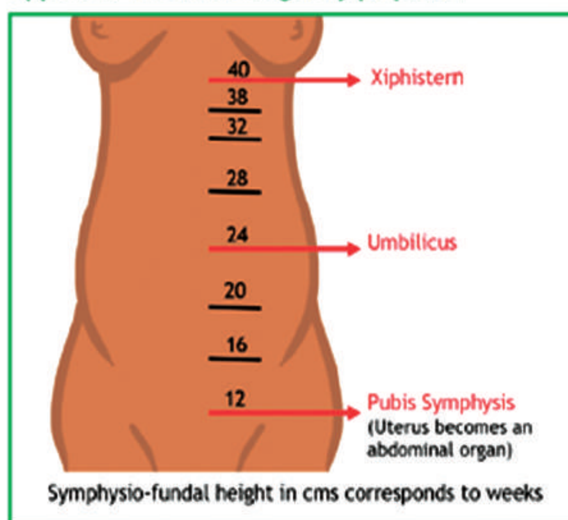
Inspection: note
- Abdominal size & shape
  - Longer than wide- longitudinal lie
  - Broad- transverse lie
- Dextrorotation of uterus
- Striae gravidarum (marks due to changes of pregnancy)
- Any scar marks of previous surgery
- Any scratch marks or rashes

Palpation: (correct dextro rotation)
- **Fundal height**

By palpation: (Appendix 1)
- Ask the woman to keep her legs straight.
- the abdomen is divided into parts by imaginary lines. Divide the lower abdomen (below the umbilicus) into three parts, with two equidistant lines between the symphysis pubis and the umbilicus. Similarly, divide the upper abdomen into three parts, again with two imaginary equidistant lines, between the umbilicus and the xiphisternum.

By measuring fundal height with a tape: (Appendix 2)
- only after 24 weeks
- Ask the woman to keep her legs straight.
- Place the ulnar (medial/inner) border of the hand on the woman's abdomen starting from the xiphisternum (the lower end of the sternum/breastbone), and gradually proceed downwards towards the symphysis pubis lifting your hand between each step down, till you finally feel a bulge/resistance, which is the uterine fundus. Mark the level of the fundus.
- Using a measuring tape, measure the distance (in cm) from the upper border of the symphysis pubis along the uterine curvature to the top of the fundus. This is the fundal height.
- After 24 weeks of gestation, the fundal height (in cm) corresponds to the gestational age in weeks (within 1-2 cm deviation).
- **Grips:** (appendix 3)
- Flex and separate the legs slightly
- Fundal grip: helps determine the lie and presentation of the fetus
- Lateral grip- it is used to locate foetal back
- Superficial pelvic grip helps to determine the head or breech is present at pelvic brim
- Deep pelvic grip- tells about the degree of flexion of head

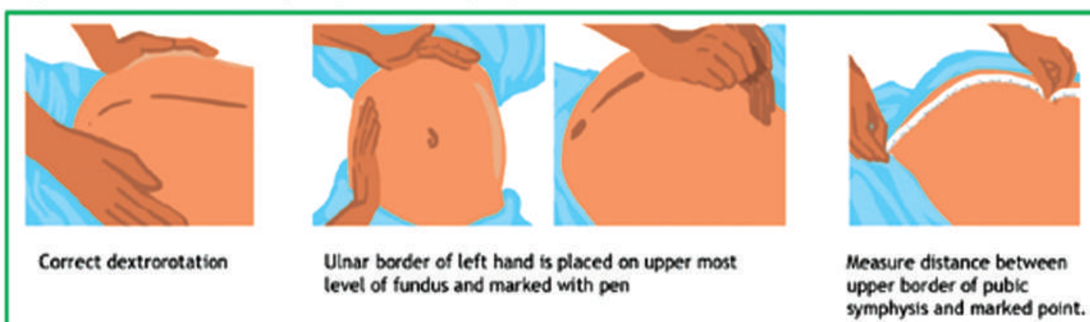
Appendix 1: Fundal height by palpation



Symphysio-fundal height in cms corresponds to weeks

- At 12th week - Just palpable above the symphysis pub
- 16th week - At lower one-third of the distance between the symphysis pubis and umbilicus
- 20th week - At two-thirds of the distance between the symphysis pubis and umbilicus
- 24th week - At the level of the umbilicus
- 28th week - At lower one-third of the distance between the umbilicus and xiphisternum
- 32nd week - At two-third of the distance between the umbilicus and xiphisternum
- 36th week - At the level of the xiphisternum
- 40th week - Sinks back to the level of the 32nd week, but the flanks are full, unlike that in the 32nd week

Appendix 2: Fundal Height by Measuring Tape



Correct dextrorotation

Ulnar border of left hand is placed on upper most level of fundus and marked with pen

Measure distance between upper border of pubic symphysis and marked point.

By measuring fundal height with a tape: only after 24 weeks

- Ask the woman to keep her legs straight.
- Place the ulnar (medial/inner) border of the hand on the woman's abdomen starting from the xiphisternum (the lower end of the sternum/breastbone), and gradually proceed downwards towards the symphysis pubis lifting your hand between each step down, till you finally feel a bulge/resistance, which is the uterine fundus. Mark the level of the fundus.
- Using a measuring tape, measure the distance (in cm) from the upper border of the symphysis pubis along the uterine curvature to the top of the fundus. This is the fundal height.
- After 24 weeks of gestation, the fundal height (in cm) corresponds to the gestational age in weeks (within 1-2 cm deviation).

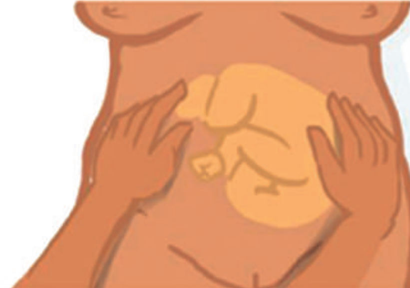
Appendix 3: Obstetric grips

A. Fundal palpation/ fundal grip

This manoeuver helps determine the lie and presentation of the foetus

B. Lateral palpation/ lateral grip

This manoeuver is used to locate the foetal back



C. First pelvic grip/superficial pelvic grip

The third manoeuver must be performed gently. It helps to determine wether the head or the breech is present at the pelvic brim. If the head cannot be moved, it indicates that the head is engaged. In the case of a transverse lie, the third grip will be empty.

D. Second pelvic grip/deep pelvic grip

This manoeuver, in experienced hands, will be able ro tell us about the degree of flexon of the head.

Auscultation:

- Identify the side with foetus's back
- If breech presentation, the mid-point of the line joining umbilicus with the lower end of last rib of mother, whichever side the back of the fetus is, will give fetal heart sound.
- If cephalic presentation, the mid-point of the line joining umbilicus with the anterior superior iliac spine on the side fetus's back is will give foetal heart sound.
- In case of transverse lie, the fetal heart sound can be heard over the fetus's back, usually at the level of umbilicus.
- Count the FHR for full one minute and also assess for regularity.
- Normal FHR is between 120 -160 bpm.

Per speculum and Per vaginum examination:

- Should ideally be done by specialist only in clear indications and after ruling out leaking and bleeding.
- Ask the patient to empty the bladder
- Make her lie down on an examination table in dorsal position, ensure privacy
- Wash your hands thoroughly and put on sterile gloves.
- Maintaining asepsis, clean the vulva with savlon/ saline/ betadine-soaked gauze
- Gently insert the Cusco's speculum
- Examine and note down your findings
- Do the P/V examination if needed.

HIGH RISK PREGNANCY CONDITIONS

Definition: A high risk pregnancy is one in which the life or health of the mother or fetus is jeopardized or endangered by a disorder coincidental with or unique to pregnancy. The risk factors may be pre-existing prior to or at the time of ante natal visit or may develop subsequently in the ongoing pregnancy.

The conditions which are considered as High Risk Pregnancy are as follows:

1. Women who have delivered by caesarean section earlier
2. Pregnancy with severe anemia (Hb less than 7gm/dL)
3. Pregnancy Induced Hypertension (BP more than or equal to 140/90mm Hg)
4. Antepartum hemorrhage
5. Bad obstetric history (abortion/stillbirth/IUD/APH/PPH etc. in previous pregnancy)
6. Mal presentation
7. Multiple pregnancy
8. Grand multipara (more than or equal to 5 pregnancies)
9. Elderly primi (more than or equal to 35 years of age in first pregnancy)
10. Early primi (less than or equal to 19 years in first pregnancy)
11. Short stature (height less than 145 cms)
12. Pregnancy with HIV/Syphilis/Hepatitis B
13. Rh Negative mother
14. Gestational Diabetes Mellitus (GDM)
15. Hypothyroidism
16. Polyhydramnios
17. Oligohydramnios
18. Any other pre existing systemic disease

SCREENING OF EVERY PREGNANT WOMEN

Every woman once confirmed as pregnant must be screened for any high risk condition. This screening may be done during routine ANC session or during PMSMA or ePMSMA sessions. Some women may have one single condition of high risk and some may have more than one. Also, it should be always kept in mind that a pregnant woman who does not have a high risk condition in the present screening may develop some condition of high risk at any point during the course of her pregnancy.

The format placed at Annexure-I is to be used to screen all pregnant womenand also may be used as a high risk follow up card.

Every institution from HWC to DH must maintain a HRP register and should be regularly updated. Format for HRP register is placed at Annexure-III.

ANEMIA IN PREGNANCY

Definition: Anemia in pregnancy is defined as hemoglobin below 11 gm/dL.

As per NFHS-5, the prevalence of Anemia amongst pregnant women in Assam is 54.2%. Severe anemia (Hemoglobin less than 7gm/dL) is considered as a high risk pregnancy.

Management of Anemia by Medical Officer (MO) and ANM depends on the degree of anemia. Severe anemia (Hb less than 7gm/dL) is to be referred to MO and treated by MO. All cases of anemia including severe anemiahas to be followed up by ANM concerned.

Classification of anemia

Classification	Hemoglobin level range (gm/dL)	Treatment by	Monthly follow up by
Mild	10-10.9	ANM/MO	ANM
Moderate	7-9.9	ANM/MO	ANM
Severe	<7	MO/ANM	ANM/MO/MVG

(source: Anemia Mukhth Bharat)

Management by ANM

Additional history specific to Anaemia

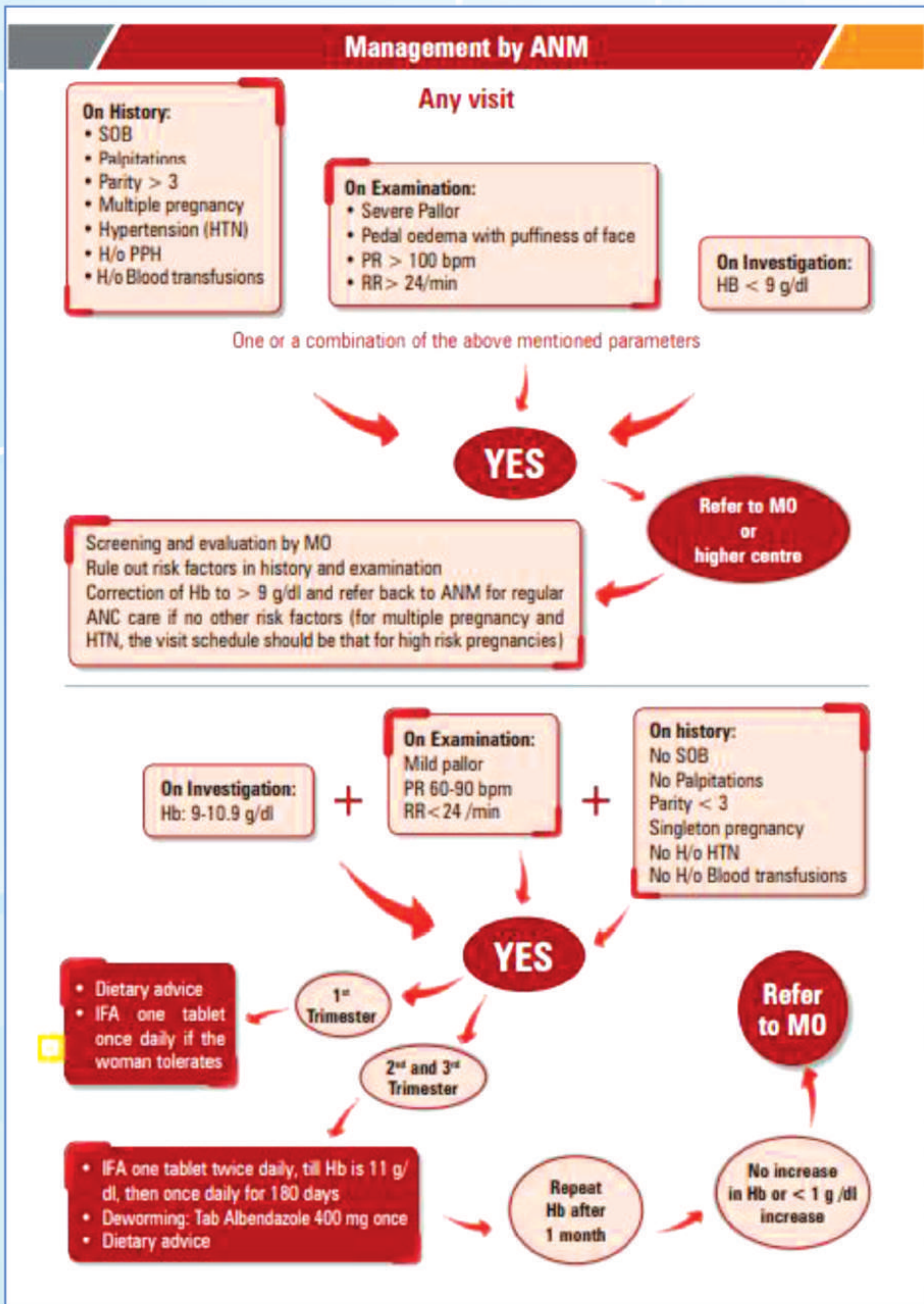
- Giddiness
- Fatigue
- Palpitations
- Shortness of breath (SOB)
- Worm infestations (passing of worms)
- No. of children and spacing (more than 3 children /less than 2 yrs of spacing)
- H/O PPH in previous pregnancies
- H/O of blood transfusions
- H/O fever with chills

Examination at every visit

a. Pallor: examine conjunctiva, nails, tongue, oral mucosa and palms
b. Pedal oedema/ puffiness of face
c. Pulse rate
d. Respiratory rate

Necessary investigation

Testing of Hb at every visit by ANM using digital/Sahli haemoglobinometer


Management by ANM
Any visit
On History:
• SOB
• Palpitations
• Parity > 3
• Multiple pregnancy
• Hypertension (HTN)
• H/o PPH
• H/o Blood transfusions
On Examination:
• Severe Pallor
• Pedal oedema with puffiness of face
• PR > 100 bpm
• RR > 24/min
On Investigation:
HB < 9 g/dl
One or a combination of the above mentioned parameters
YES
Refer to MO or higher centre
Screening and evaluation by MO
Rule out risk factors in history and examination
Correction of Hb to > 9 g/dl and refer back to ANM for regular ANC care if no other risk factors (for multiple pregnancy and HTN, the visit schedule should be that for high risk pregnancies)
On Investigation:
Hb: 9-10.9 g/dl
+
On Examination:
Mild pallor
PR 60-90 bpm
RR < 24 /min
+
On history:
No SOB
No Palpitations
Parity < 3
Singleton pregnancy
No H/o HTN
No H/o Blood transfusions
YES
1st Trimester
• Dietary advice
• IFA one tablet once daily if the woman tolerates
2nd and 3rd Trimester
• IFA one tablet twice daily, till Hb is 11 g/dl, then once daily for 180 days
• Deworming: Tab Albendazole 400 mg once
• Dietary advice
Repeat Hb after 1 month
No increase in Hb or < 1 g /dl increase
Refer to MO

Management by ANM

DIETARY COUNSELING

- Diet rich in proteins, iron, vitamin A, vitamin C, calcium and other micronutrients: E.g. cereals, milk and milk products (curd and paneer), green leafy vegetables, pulses, eggs, meat (fish and poultry), groundnuts, ragi, jaggery and fruits
- To avoid taking tea, coffee or milk within an hour after a meal
- Foods rich in proteins and vitamin C (E.g. lemon, amla, guava and oranges) help in the absorption of iron

IFA COUNSELING

- Inform about common side-effects like nausea, constipation and black stools
- Check compliance by asking about black stools
- Avoid taking IFA tablet along with milk
- Explain the necessity of taking IFA tablets and the dangers associated with anaemia
- Women should be advised to take IFA tablet immediately after food and calcium tablet 2 hours later

WHEN TO REFER CHECKLIST

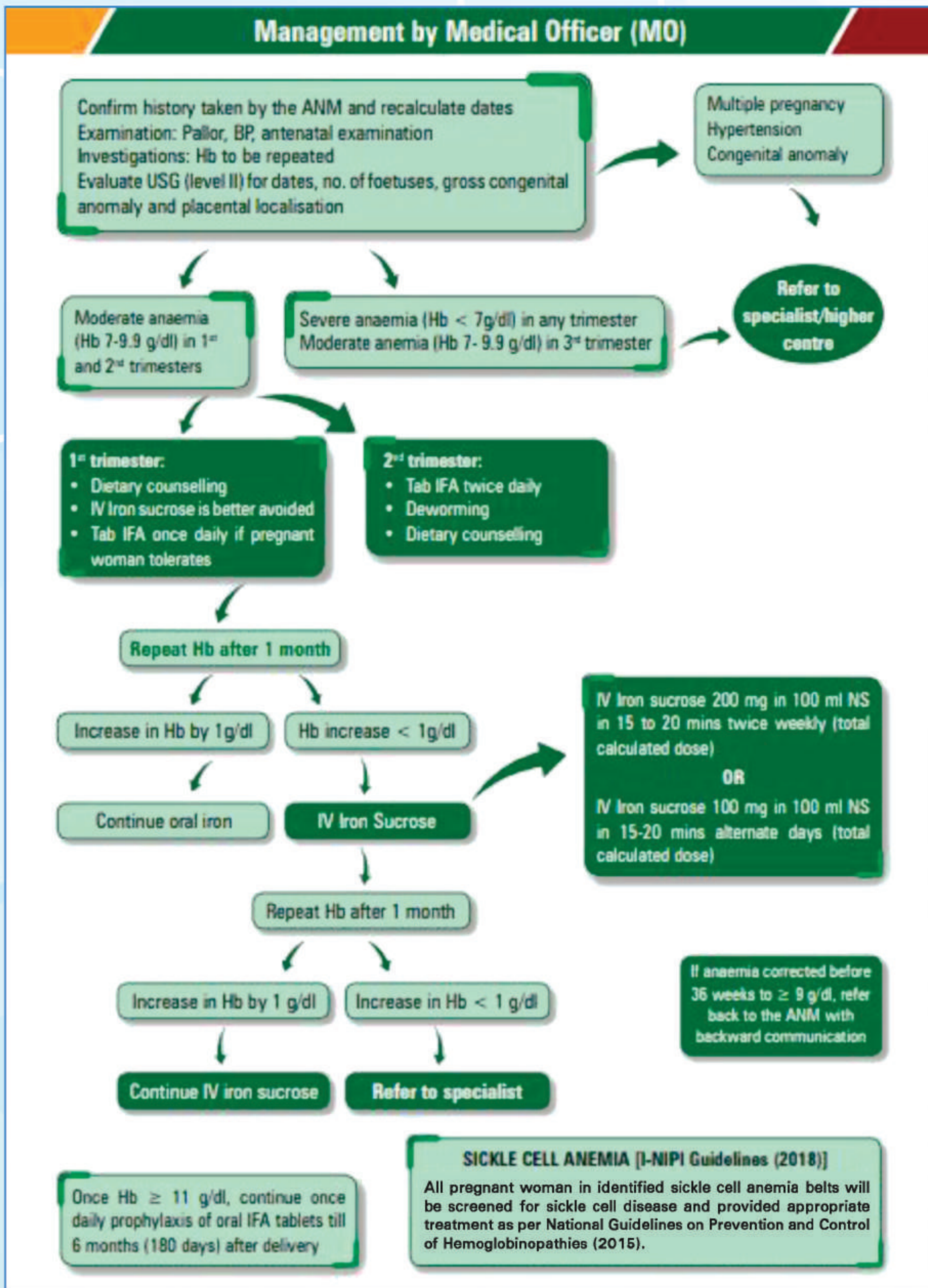
- Any pregnant woman with pallor and breathlessness (RR > 24/min) and or tachycardia (PR >100 bpm)
- All pregnant women with Hb < 9 g/dl
- All pregnant women with mild anaemia who do not show rise in repeat Hb by 1 g/dl after 1 month
- All pregnant women who develop vomiting/severe nausea/diarrhoea/severe constipation with IFA

FOLLOW UP

Anaemia corrected at PHC /MO before 36 weeks to be handed over to ANM with backward communication after optimizing Hb to 9 g/dl and above

ANM will guide the mother on the following:

- To continue oral iron therapy, diet
- Family to be sensitized regarding nutritional needs of mother
- Mother to be contacted every week by ANM and if no other risk factors, can be delivered at PHC


Management by Medical Officer (MO)
Confirm history taken by the ANM and recalculate dates
Examination: Pallor, BP, antenatal examination
Investigations: Hb to be repeated
Evaluate USG (level II) for dates, no. of foetuses, gross congenital anomaly and placental localisation
Multiple pregnancy
Hypertension
Congenital anomaly
Refer to specialist/higher centre
Moderate anaemia (Hb 7-9.9 g/dl) in 1st and 2nd trimesters
Severe anaemia (Hb < 7g/dl) in any trimester
Moderate anemia (Hb 7- 9.9 g/dl) in 3rd trimester
1st trimester:
Dietary counselling
IV Iron sucrose is better avoided
Tab IFA once daily if pregnant woman tolerates
2nd trimester:
Tab IFA twice daily
Deworming
Dietary counselling
Repeat Hb after 1 month
Increase in Hb by 1g/dl
Hb increase < 1g/dl
Continue oral iron
IV Iron Sucrose
IV Iron sucrose 200 mg in 100 ml NS in 15 to 20 mins twice weekly (total calculated dose)
OR
IV Iron sucrose 100 mg in 100 ml NS in 15-20 mins alternate days (total calculated dose)
Repeat Hb after 1 month
Increase in Hb by 1 g/dl
Increase in Hb < 1 g/dl
Continue IV iron sucrose
Refer to specialist
If anaemia corrected before 36 weeks to ≥ 9 g/dl, refer back to the ANM with backward communication
Once Hb ≥ 11 g/dl, continue once daily prophylaxis of oral IFA tablets till 6 months (180 days) after delivery
SICKLE CELL ANEMIA [I-NIPI Guidelines (2018)]
All pregnant woman in identified sickle cell anemia belts will be screened for sickle cell disease and provided appropriate treatment as per National Guidelines on Prevention and Control of Hemoglobinopathies (2015).

Management by Medical Officer (MO)

APPENDIX 1

Calculation of dose for parenteral iron therapy:

Required iron dose (mg) = [2.4 × (target Hb-actual Hb) × pre-pregnancy weight (kg)] + 1000 mg for replenishment of stores

APPENDIX 2

Parenteral iron therapy:

- Stop oral iron 48 hrs before parenteral iron
- To be administered as day care basis
- No need of test dose
- Keep emergency drugs tray ready

APPENDIX 3

1. Indications for parenteral iron: No response or intolerance to oral iron, severe anaemia < 34 weeks
2. If intolerance to IV iron: refer to specialist
3. Contraindications to parenteral iron: H/O hypersensitivity, renal or liver disease, thalassemia, sickle cell anaemia

APPENDIX 4

Parenteral iron therapy adverse events management

Each patient should be observed for adverse effects for at least 30 minutes

COMMON ADVERSE EVENTS

- Diarrhoea
- Nausea
- Vomiting
- Headache
- Dizziness
- Hypotension
- Pruritus
- Pain in Extremity
- Arthralgia
- Back Pain
- Muscle cramps
- Injection site reactions
- Chest pain
- Peripheral oedema

- Staff trained to evaluate and manage anaphylactic reactions
- If hypersensitivity reactions or signs of intolerance occur during administration, the treatment must be stopped immediately
- Facilities for handling acute anaphylactic / anaphylactoid reactions should be available, including an injectable 1:1000 adrenaline solution
- Inj. Hydrocortisone 200 mg IV
- 0.5 mg (0.5 ml) of 1:1000 Adrenaline IM into thigh
- Oxygen by mask
- IV normal saline if hypotension

HYPERTENSIVE DISORDERS OF PREGNANCY

Definition: For programmatic implementation, hypertension in pregnant women is considered when BP >=140/90 at any time of pregnancy.

Incidence: Hypertensive disorders in pregnancy prevalent in about 10% of all pregnancies. $1^{st}/3^{rd}$ of the hypertension diagnosed in pregnant women is due to chronic hypertension and $2^{nd}/3^{rd}$ is due to pregnancy induced. Eclampsia which is a known complication of hypertension during pregnancy is associated with10% of maternal death.

Classification

i. Chronic hypertension: If a pregnant woman has hypertension before 20 weeks of gestation then it is classified as a case of chronic hypertension.

ii. Pregnancy induced hypertension (PIH): If hypertension in a pregnant woman develops after 20 weeks of gestation.

iii. Pre-eclampsia: May present with any symptoms of headache, blurring of vision, epigastric pain or oliguria and oedema.

iv. Severe pre-eclampsia: The blood pressure is >= 160/110 with proteinuria 3+ or 4+

v. Eclampsia: Eclampsia is the occurrence of generalized convulsion(s), usually associated with background of pre-eclampsia during pregnancy, labour or within seven days of delivery. However, it can occur even in normotensive women.Sometimes convulsions may occur with >=140/90 and proteinuria more than trace.

Hypertensive Disorders of Pregnancy

Management by ANM

Follow routine antenatal visit schedule till hypertension (HTN) is detected

If H/O:
- Previous pregnancy losses
- High BP in previous pregnancy
- Preeclampsia/ eclampsia in previous pregnancy
- Pre-existing chronic hypertension, kidney disease, diabetes (on medications)

Or C/O warning symptoms of preeclampsia in any visit
- Generalized oedema particularly non-dependent
- Sudden onset headache
- Vomiting
- Pain in upper abdomen (epigastric)
- Blurring of vision
- Decreased urine output

If on examination:
- Excessive weight gain (> 0.5 kg/wk)
- Pallor/ pedal oedema with non-dependent oedema
- BP ≥ 140/90 mmHg
- Abdominal examination: fundal height < gestational age

On investigations:
- Urine protein 2+ or more (with dipstick)

NO → **Follow regular ANC visit schedule**

YES → **Refer to MO**
Advise on danger signs and to have a hospital delivery. Early registration at a higher centre

If on any visit: BP ≥ 160/110 mmHg/warning symptoms and signs of preeclampsia/eclampsia
- Give Inj. Labetalol 20 mg. orally and Inj. MgSO4 10 ml (5 gms) deep IM in each buttock (note the dose in MCP card and refer)
- High risk counselling

Emergency referral → **MO/higher centre**

Counselling by ANM:
- Explain about the warning signs in all patients with high risk factors
- Importance of daily foetal movement count (DFMC)
- Calcium supplementation: 500 mg calcium with Vitamin D3 250 IU twice daily for 6 months antenatally after 1st trimester and 6 months during lactation for all pregnant women (GOI recommendation)

Other risk factors ANM should be vigilant about:
- Age < 20 yrs
- Age > 35 yrs
- Overweight (BMI > 25) /obesity (BMI > 30)
- Primipara
- Pregnancy interval more than 10 yrs
- Family history of hypertension in mother/ sister

For details on magnesium sulphate injection and dosing, refer figure 1

Management by Medical Officer (MO)

When pregnant woman is referred in 1st trimester (based on history)

- Confirm history and dates
- Examination: antenatal examination
- Check the level II USG for dates, no. of foetuses, gross congenital anomaly, placental localisation, cervical length and uterine artery Doppler if available
- Repeat USG if needed

If on history:

- Early onset preeclampsia in previous pregnancy
- Preeclampsia in more than one previous pregnancy
- Early onset preeclampsia in previous pregnancy with preterm labour before 34 weeks

YES

- Start tab Ecospirin 60-80 mg once daily
- Refer to higher centre for early registration and prediction of preeclampsia

NO

Follow routine antenatal visit schedule

On subsequent antenatal visits, check for the following:

On History:

- Generalized oedema particularly non-dependent
- Sudden onset headache
- Vomiting
- Epigastric pain
- Blurring of vision
- Reduced urine output

On Examination:

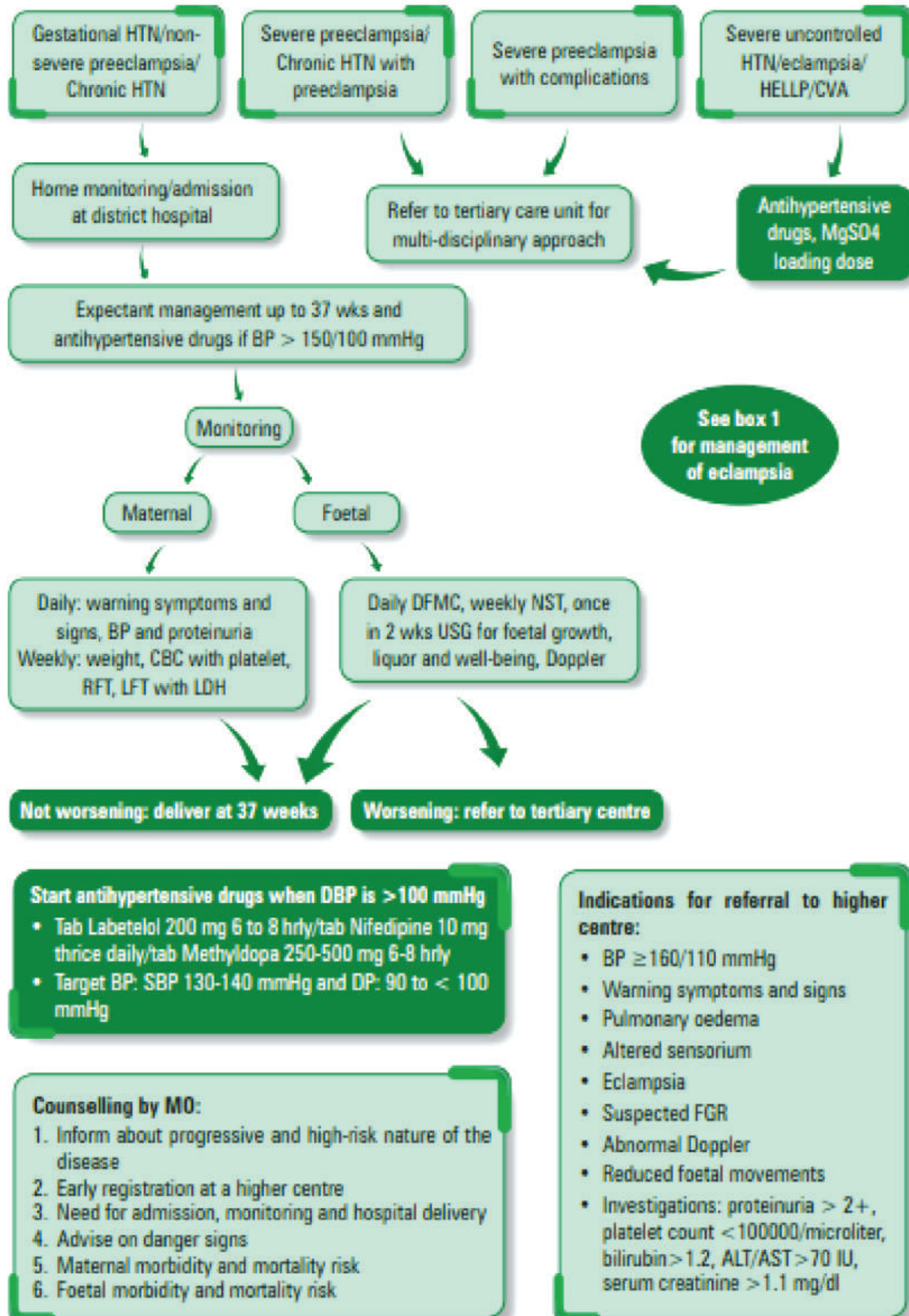
- Excessive weight gain (> 0.5 kg/week)
- Pedal oedema with non-dependent oedema
- BP ≥ 140/90 mm of Hg
- Abdominal examination: fundal height < gestational age

On Investigations:

- Proteinuria by dipstick method
- Full blood count with platelets, blood urea, serum creatinine (RFT), liver function test (LFT)
- Repeat USG if needed
- Liver function tests (Serum bilirubin, ALT/SGOT, AST/SGPT and LDH)

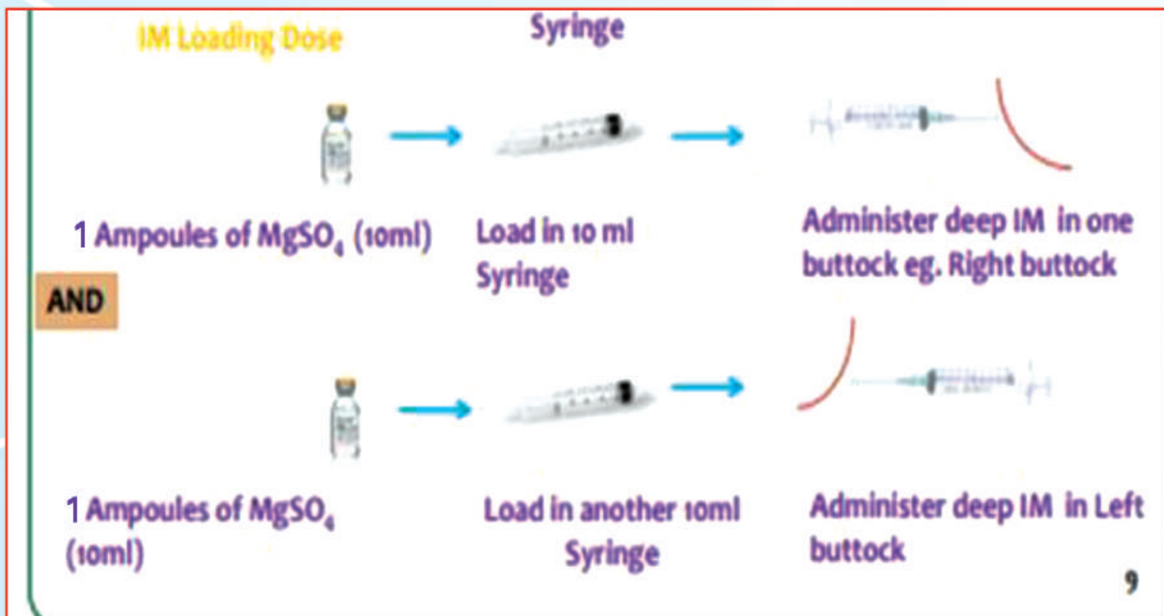
Ensure calcium supplementation as recommended by GOI

Based on symptoms, blood pressure records and investigations, classify as per figure 2



Management by Medical Officer (MO)
Management as per classification
Gestational HTN/non-severe preeclampsia/ Chronic HTN
Severe preeclampsia/ Chronic HTN with preeclampsia
Severe preeclampsia with complications
Severe uncontrolled HTN/eclampsia/ HELLP/CVA
Home monitoring/admission at district hospital
Refer to tertiary care unit for multi-disciplinary approach
Antihypertensive drugs, MgSO4 loading dose
Expectant management up to 37 wks and antihypertensive drugs if BP > 150/100 mmHg
Monitoring
See box 1 for management of eclampsia
Maternal
Foetal
Daily: warning symptoms and signs, BP and proteinuria Weekly: weight, CBC with platelet, RFT, LFT with LDH
Daily DFMC, weekly NST, once in 2 wks USG for foetal growth, liquor and well-being, Doppler
Not worsening: deliver at 37 weeks
Worsening: refer to tertiary centre
Start antihypertensive drugs when DBP is >100 mmHg
• Tab Labetelol 200 mg 6 to 8 hrly/tab Nifedipine 10 mg thrice daily/tab Methyldopa 250-500 mg 6-8 hrly
• Target BP: SBP 130-140 mmHg and DP: 90 to < 100 mmHg
Counselling by MO:
1. Inform about progressive and high-risk nature of the disease
2. Early registration at a higher centre
3. Need for admission, monitoring and hospital delivery
4. Advise on danger signs
5. Maternal morbidity and mortality risk
6. Foetal morbidity and mortality risk
Indications for referral to higher centre:
• BP ≥160/110 mmHg
• Warning symptoms and signs
• Pulmonary oedema
• Altered sensorium
• Eclampsia
• Suspected FGR
• Abnormal Doppler
• Reduced foetal movements
• Investigations: proteinuria > 2+, platelet count <100000/microliter, bilirubin>1.2, ALT/AST>70 IU, serum creatinine >1.1 mg/dl

Magnesium Sulphate (MgSO4) Injection



If convulsions not controlled after loading dose, repeat 2 gms MgSO4 (4 ml) diluted with 6 ml distilled water, slow IV

Maintenance Dose:

- 5 gms MgSO4 deep IM, 4 hourly one buttock at a time, if there are no signs of MgSO4 overdose
- Check reflexes, urine output and respiratory rate before giving MgSO4
- Continue for 24 hours after the last convulsion or delivery whichever is later

Monitoring of the patient after injection Magnesium Sulphate:

- Magnesium sulphate is a very safe drug and can be easily used with monitoring of toxicity signs like
  - Absent knee jerk (DTR)
  - Urine output less than 25 to 30 ml/hr
  - Respiratory rate <16/min

  If any ONE sign of toxicity is seen, withhold the next dose
- Give antidote: Inj. calcium gluconate 10 ml 10 % in 10 minutes, slow IV, if RR <16/min

Management by Medical Officer (MO)

Figure 2: Classification of hypertension in pregnancy

Classification	HTN after 20 wks	Proteiruria	Symptoms and signs
Gestational HTN	≥140/90	✗	✗
Non-severe preeclampsia	140/90 to <160/110	Trace or 1+ or 2+	✗
Severe preeclampsia	140/90 to <160/110	Trace or 1+ or 2+	✓
Severe preeclampsia	≥160/110	3+ or 4+	✓ or ✗
Eclampsia	≥140/90	Trace or 1+ or 2+ or 3+ or 4+	Convulsions
Chronic HTN	≥140/90 before 20 wks	Trace or 1+	✗
Chronic HTN super imposed with preeclampsia	≥140/90 before 20 wks	Trace or 1+ or 2+ or 3+ or 4+	✓ or ✗

Box 1: Management of a patient with eclampsia

Management of eclampsia:

- Place woman in left lateral position
- Assess breathing and clear airway
- Secure IV line and start infusion (slow 70 ml/hr @ 15 drops/min)
- Catheterise and note the urine output
- DBP more than 100 mmHg: tab Nifedipine 10 mg orally
- Anticonvulsant: $MgSO_4$ loading dose as recommended
- Refer to tertiary centre after stabilisation of convulsions and BP
- NO ROLE OF MANNITOL

Delivery is the definitive treatment: within 12 hrs for eclampsia and within 24 hrs for preeclampsia with severe features

GESTATIONAL DIABETES MELLITUS (GDM)

Definition: GDM means glucose intolerance of variable degrees, with onset of first recognition during pregnancy. In India, GDM is estimated to be 10-14.3%. If GDM remains undiagnosed or inadequately treated it may lead to significant maternal and fetal complications.

Screening for GDM

i. Testing for GDM is recommended twice during ANC.

ii. The first testing should be done during first antenatal contact as early as possible in pregnancy.

iii. The second testing should be done during 24-28 weeks of pregnancy if the first test is negative.

iv. There should be at least 4 weeks gap between the two tests.

v. The test is to be conducted for all PW even if she comes late in pregnancy for ANC at the time of first contact.

vi. If she presents beyond 28 weeks of pregnancy, only one test is to be done at the first point of contact.

How to do 75gm OGTT

i. 75 gm glucose is given orally after dissolving in 300 ml. potable water.

ii. The intake has to be completed within 5-10 minutes in small sips.

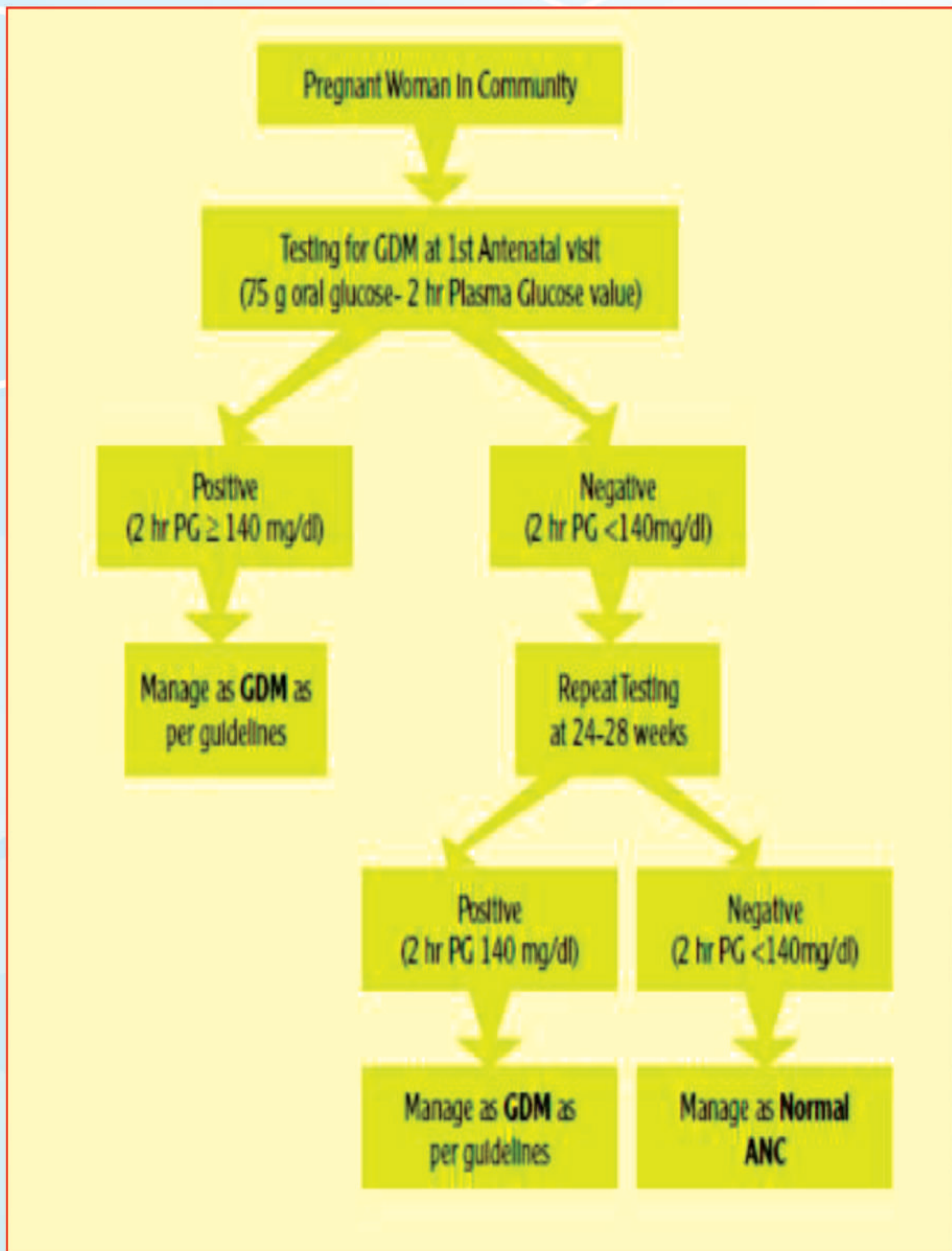
iii. Whether the pregnant women come in fasting or non-fasting state, irrespective of the last meal.

iv. In case the women vomits within 30 minutes of consuming then repeat the test. If vomiting occurs after 30 mins of glucose intake then testing can be done as usual.

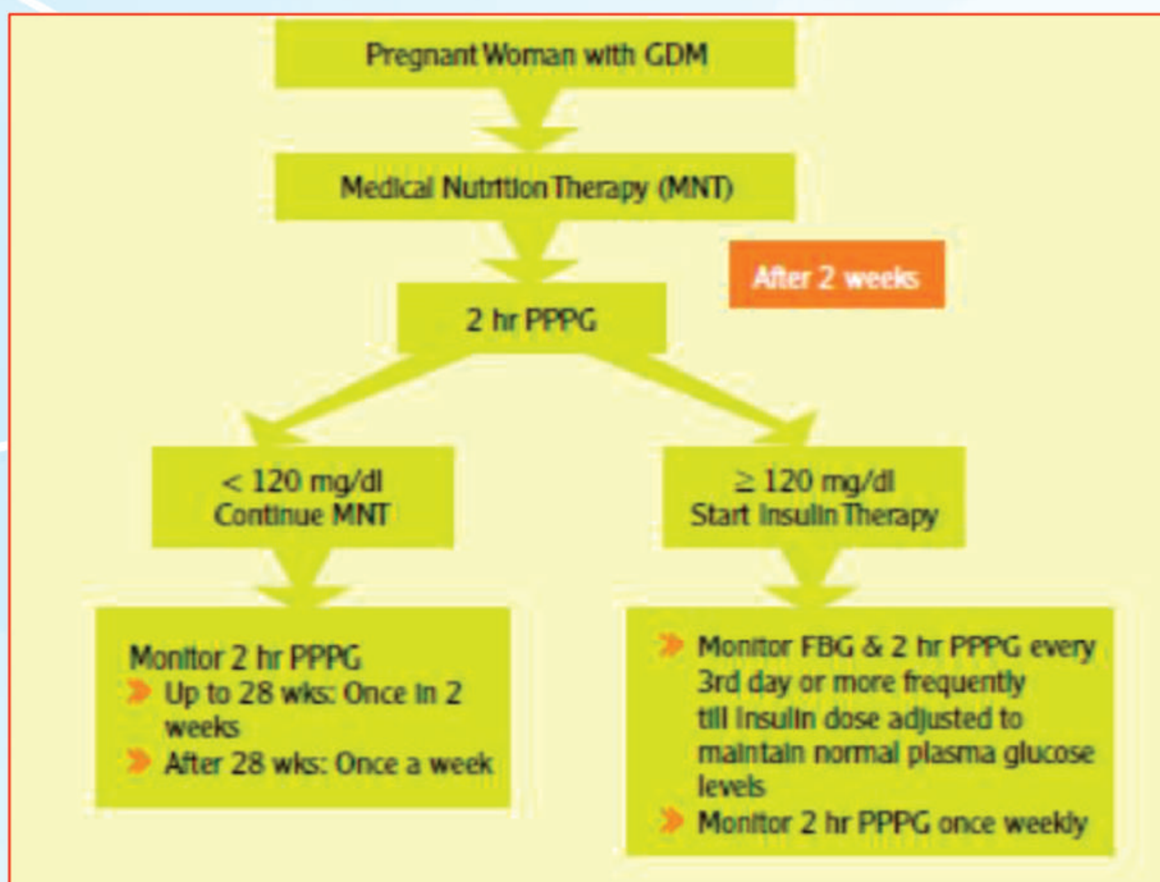
v. Wait for 2 hours once the 75g. glucose in 300ml. water intake is complete

vi. Check for blood sugar using glucometer and record the reading in MCP card.

Testing for GDM



Management of GDM



Advise to women with GDM

i. Exercise- routine daily household work and light physical exercise for 30 minutes daily (like walking and hand exercises)

ii. Diet-Calorie intake of 30 Kcal/kg for normal weight women (50% carbohydrate, 40% fats and 20% proteins) A mixed meal consisting of carbohydrate, protein, fat, fiber eaten together results in slow blood sugar rise.

iii. Calorie distribution is as 3 meals and 3 snacks The target plasma glucose FBS- < 90 mg/dl and 2hr. PPBS < 120 mg/dl.

Energy requirement during pregnancy

Level of Activity	Example of workers of this category of activity	Energy requirement during pregnancy	Total energy requirement (kcal/Day)
Sedentary work	Teacher, tailor, housewife, nurse	1900+350	2250
Moderate Work	Maid servant, coolie, weaver, agriculture labourer, basket maker, bidi maker	2230+350	2580
Heavy Work	Stone cutter	2850+350	3200

Special Obstetric care for PW with GDM

i. Antenatal care of a PW with GDM should be provided by gynecologist if available.

ii. In cases diagnosed before 20 weeks of pregnancy, a fetal anatomical survey by USG should be performed at 18-20 weeks.

iii. For all pregnancies with GDM, a fetal growth scan should be performed at 28-30 weeks gestation & repeated at 34-36 weeks gestation. There should be at least 3 weeks gap between the two ultrasounds and it should include fetal biometry & amniotic fluid estimation.

iv. PW with GDM in whom blood glucose level is well controlled and there are no complications, should go for routine antenatal care as per GoI guidelines.

v. In PW with GDM having uncontrolled blood glucose level or any other complication of pregnancy, the frequency of antenatal visits should be increased to every 2 weeks in second trimester and every week in third.

vi. Monitor for abnormal fetal growth (macrosomia/growth restriction) and polyhydramnios at each ANC visit .

vii. PW with GDM to be diligently monitored for hypertension in pregnancy, proteinuria and other obstetric complications

viii. In PW with GDM between 24-34 weeks of gestation and requiring early delivery, antenatal steroids should be given as per GoI guidelines i.e. Inj. Dexamethasone 6 mg IM 12 hourly for 2 days.

ix. More vigilant monitoring of blood glucose levels should be done for next 72 hours following injection. In case of raised blood glucose levels during this period, adjustment of insulin dose should be made accordingly.

Foetal Surveillance in PW with GDM

i. Fetal heart should be monitored by auscultation on each antenatal visit.

ii. PW should be explained about Daily Fetal Activity Assessment. One simple method is to ask her to lie down on her side after a meal and note how long it takes for the foetus to kick 10 times. If the foetus does not kick 10 times within 2 hrs, she should immediately consult a healthcare worker and if required should be referred to a higher centre for further evaluation.

ANTEPARTUM HEMORRHAGE

Definition: Bleeding per Vagina after 20 weeks of gestation.

Any such case has to be immediately referred by the ASHA/ANM to Medical Officer.

MANAGEMENT BY MEDICAL OFFICER (MO)

HISTORY
- Review history taken by the ANM
- Confirm POG
- Check all available records, old documents
- Check USG report

EXAMINATION
- Consciousness
- Pulse, B.P, Respiratory rate
- Pallor
- P/A - Uterine contour, foetal heart present or absent/rate
- Urine output

H/0 Painless bleeding
- May be recurrent

O/E: Pallor and vitals proportional to blood loss.
P/A Uterus corresponding to POG, presenting part free
P/V: NOT TO BE DONE
(See details in Table 1)

→ Placenta Previa

H/0 bleeding a/w pain abdomen
- H/O trauma, increase in BP

O/E: Pallor and vitals may be deranged out of proportion to blood loss.
P/A Uterus corresponding to POG or may be enlarged
P/V: May be done if placenta previa is ruled out by USG. (See details in Table 1)

→ Abruptio Placentae

H/0 bleeding a/w labour pains
- H/O sudden cessation of pains may be present

O/E: Pallor and vitals may be deranged out of proportion to blood loss.
P/A: uterine contour is lost, fetal parts palpable superficially, FHS absent
P/V: high up fetal parts, retracted cervix

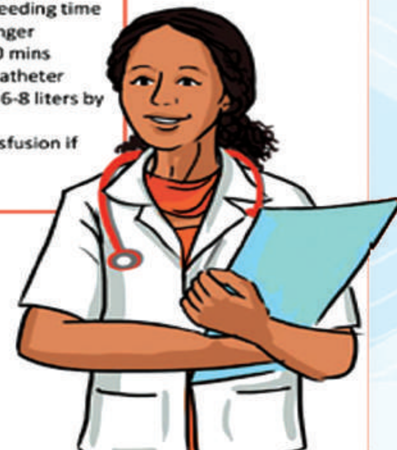
→ Uterine rupture

On the basis of patient's general condition and vitals classify the severity of shock (Table 2)

Class I Haemorrhage
→ Maternal condition stable/ Bleeding stopped
→ Do Ultrasound if available
- Normal live foetus appropriate to Gestational age, placenta situated in upper segment, no retroplacental clot → Do P/S to rule out local causes → Routine ANC
- If USG shows any abnormality like: Low Lying placenta, Retroplacental clot, Irregular Fetal heart rate/ IUD → Refer to tertiary care hospital/specialist

Class II, III, IV Haemorrhage
→ Resuscitate
- Insert I.V canula (16/18 G)
- Take sample for blood grouping and cross matching, hemoglobin, clotting time, bleeding time
- Start i.v fluid (ringer lactate), 1L in 20 mins
- Insert a Foleys catheter
- Start Oxygen @ 6-8 liters by mask
- Start blood transfusion if available

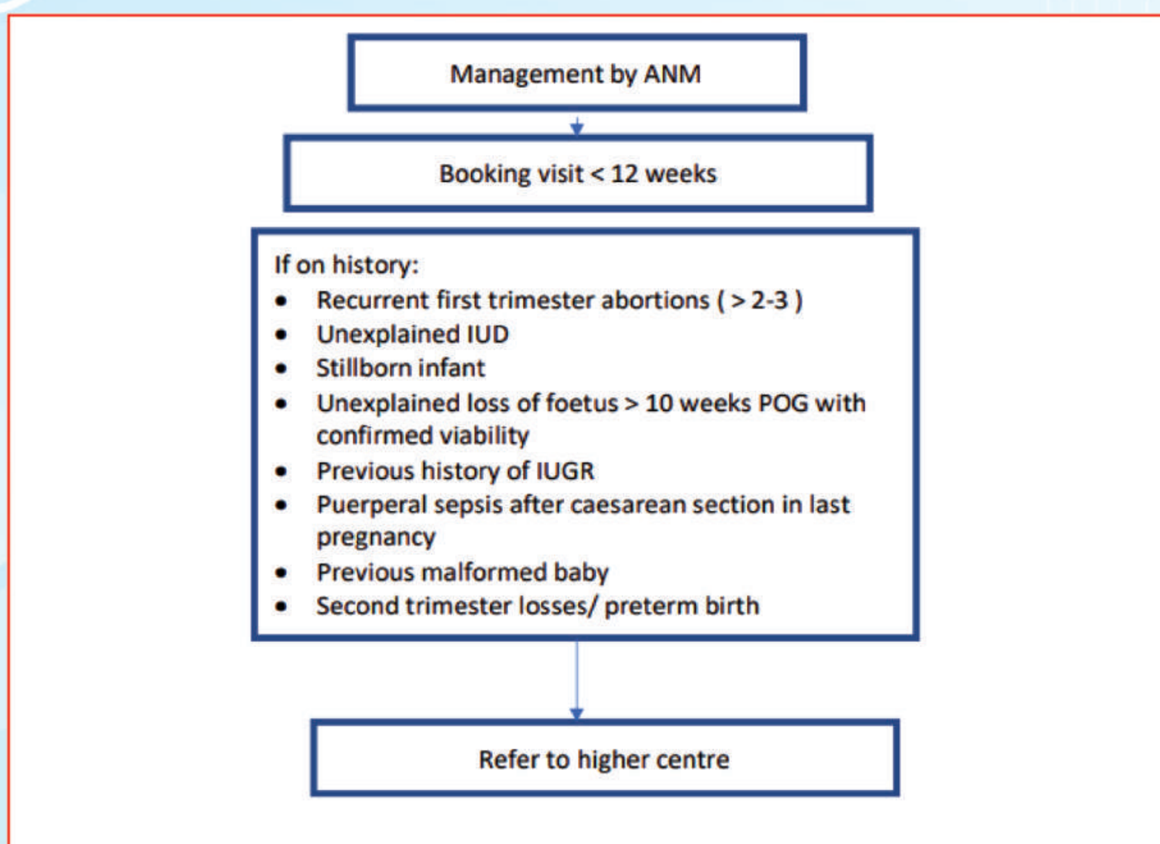
→ Refer to tertiary care hospital/specialist



BAD OBSTETRIC HISTORY (BOH)

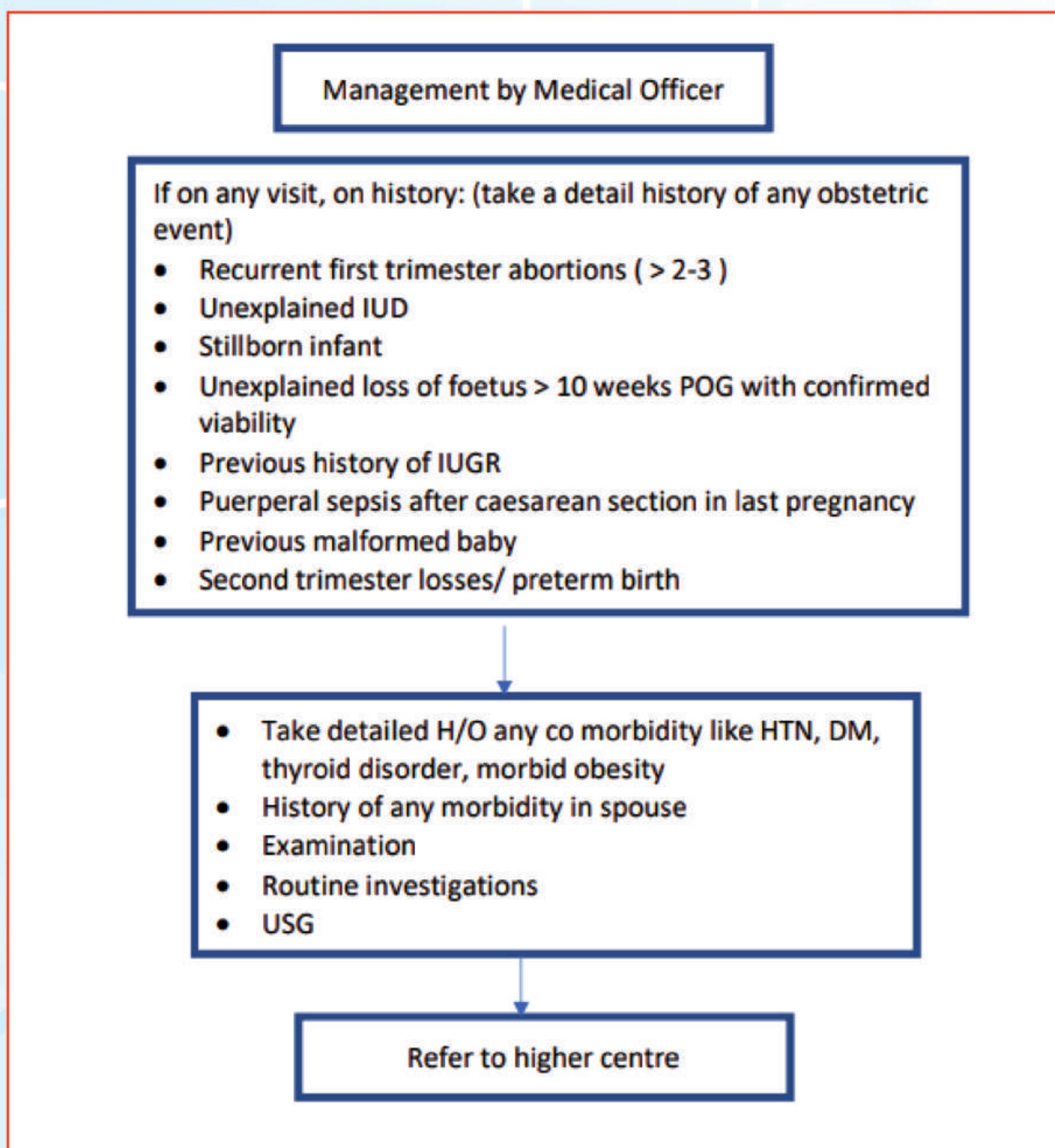
BOH: It is defined as any past obstetric history or event which can have a bad influence on the future obstetric outcomes of the patient.

Note: Management of a patient with BOH should ideally be done by a specialist. The ANM should be able to identify these patients and refer them to the higher centre as early as possible. The medical officer should be able to screen, on the basis of history, those patients who have been missed by the ANM or she is unsure about.



Counselling by ANM:

i. Explain about high risk nature of pregnancy
ii. Need for early registration at a tertiary level hospital
iii. Need for follow up and delivery at a higher centre



Counselling by Medical Officer:

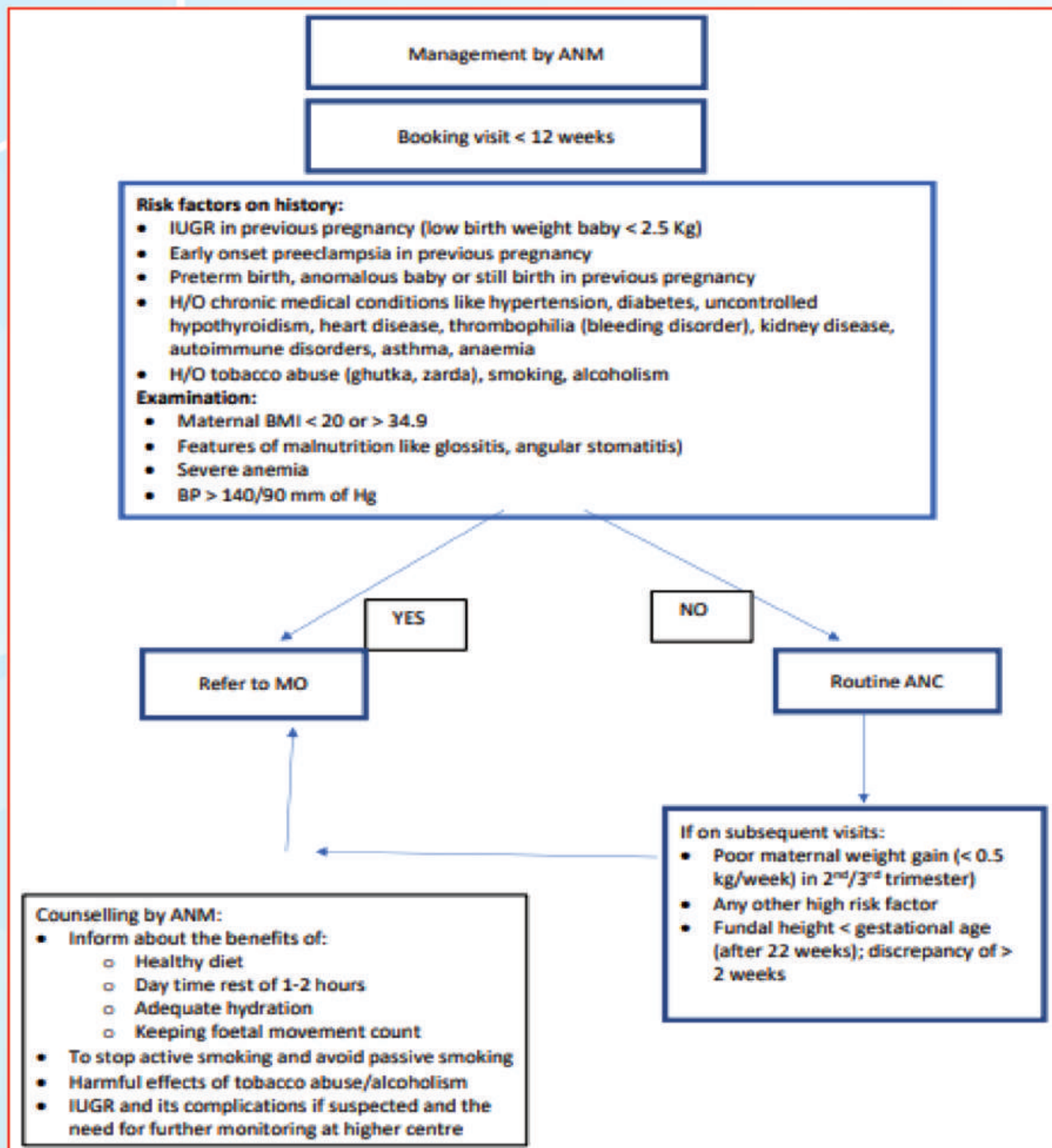
i. Explain about high risk nature of pregnancy

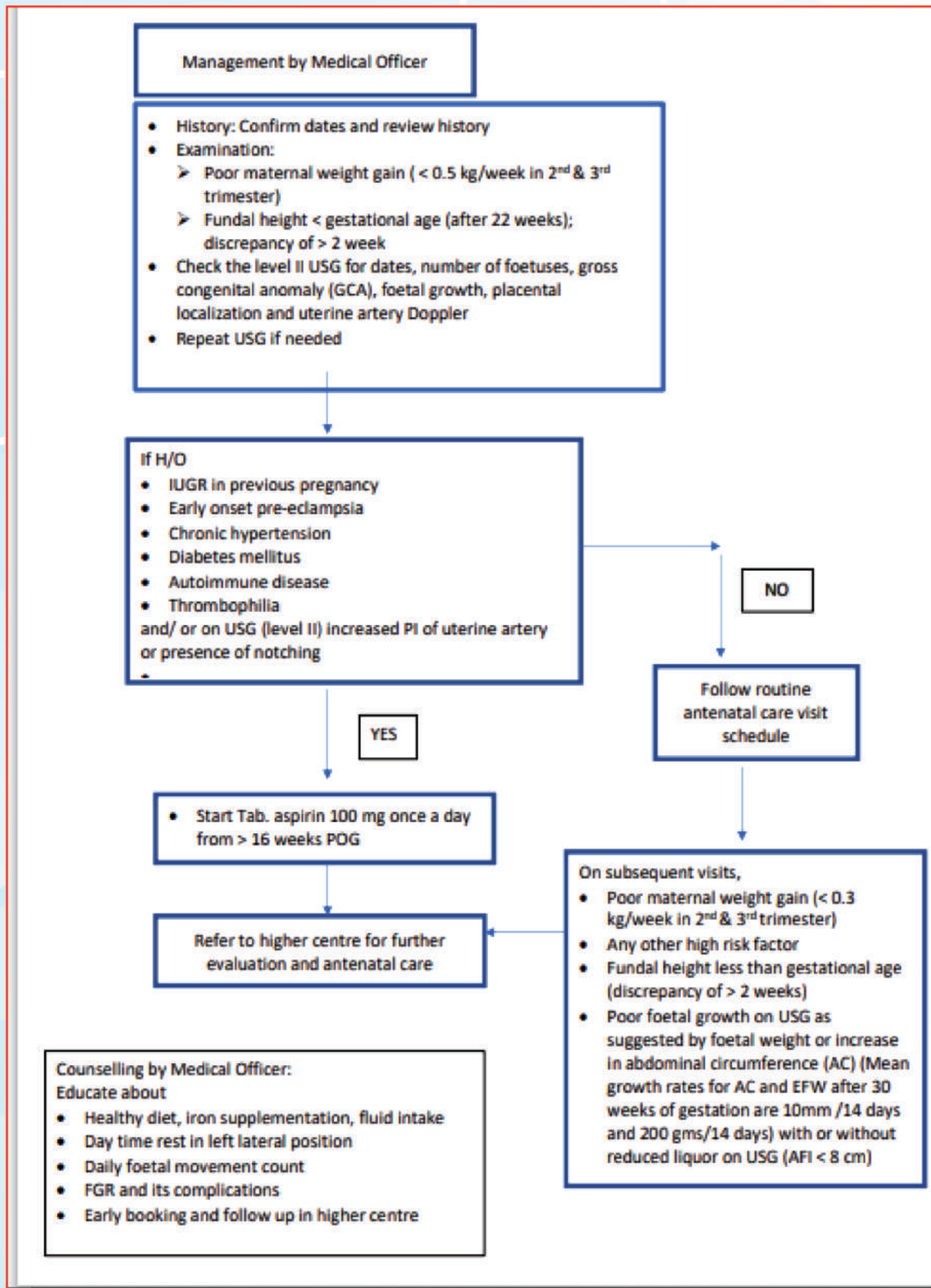
ii. Need for early registration at a tertiary level hospital

iii. Need for follow up and delivery at a higher centre

INTRA UTERINE GROWTH RETARDATION

Definition: It is referred to birth weight below the 10th percentile for the gestational age caused by fetal, maternal or placental factors. The fetus is healthy but small for gestational age (SGA). Causes; Pre-eclampsia, long standing DM, placenta praevia, pre-pregnancy wt of < 500gms. per week.




Management by Medical Officer
• History: Confirm dates and review history
• Examination:
➢ Poor maternal weight gain (< 0.5 kg/week in 2nd & 3rd trimester)
➢ Fundal height < gestational age (after 22 weeks); discrepancy of > 2 week
• Check the level II USG for dates, number of foetuses, gross congenital anomaly (GCA), foetal growth, placental localization and uterine artery Doppler
• Repeat USG if needed
If H/O
• IUGR in previous pregnancy
• Early onset pre-eclampsia
• Chronic hypertension
• Diabetes mellitus
• Autoimmune disease
• Thrombophilia
and/ or on USG (level II) increased PI of uterine artery or presence of notching
NO
YES
Follow routine antenatal care visit schedule
• Start Tab. aspirin 100 mg once a day from > 16 weeks POG
Refer to higher centre for further evaluation and antenatal care
On subsequent visits,
• Poor maternal weight gain (< 0.3 kg/week in 2nd & 3rd trimester)
• Any other high risk factor
• Fundal height less than gestational age (discrepancy of > 2 weeks)
• Poor foetal growth on USG as suggested by foetal weight or increase in abdominal circumference (AC) (Mean growth rates for AC and EFW after 30 weeks of gestation are 10mm /14 days and 200 gms/14 days) with or without reduced liquor on USG (AFI < 8 cm)
Counselling by Medical Officer:
Educate about
• Healthy diet, iron supplementation, fluid intake
• Day time rest in left lateral position
• Daily foetal movement count
• FGR and its complications
• Early booking and follow up in higher centre

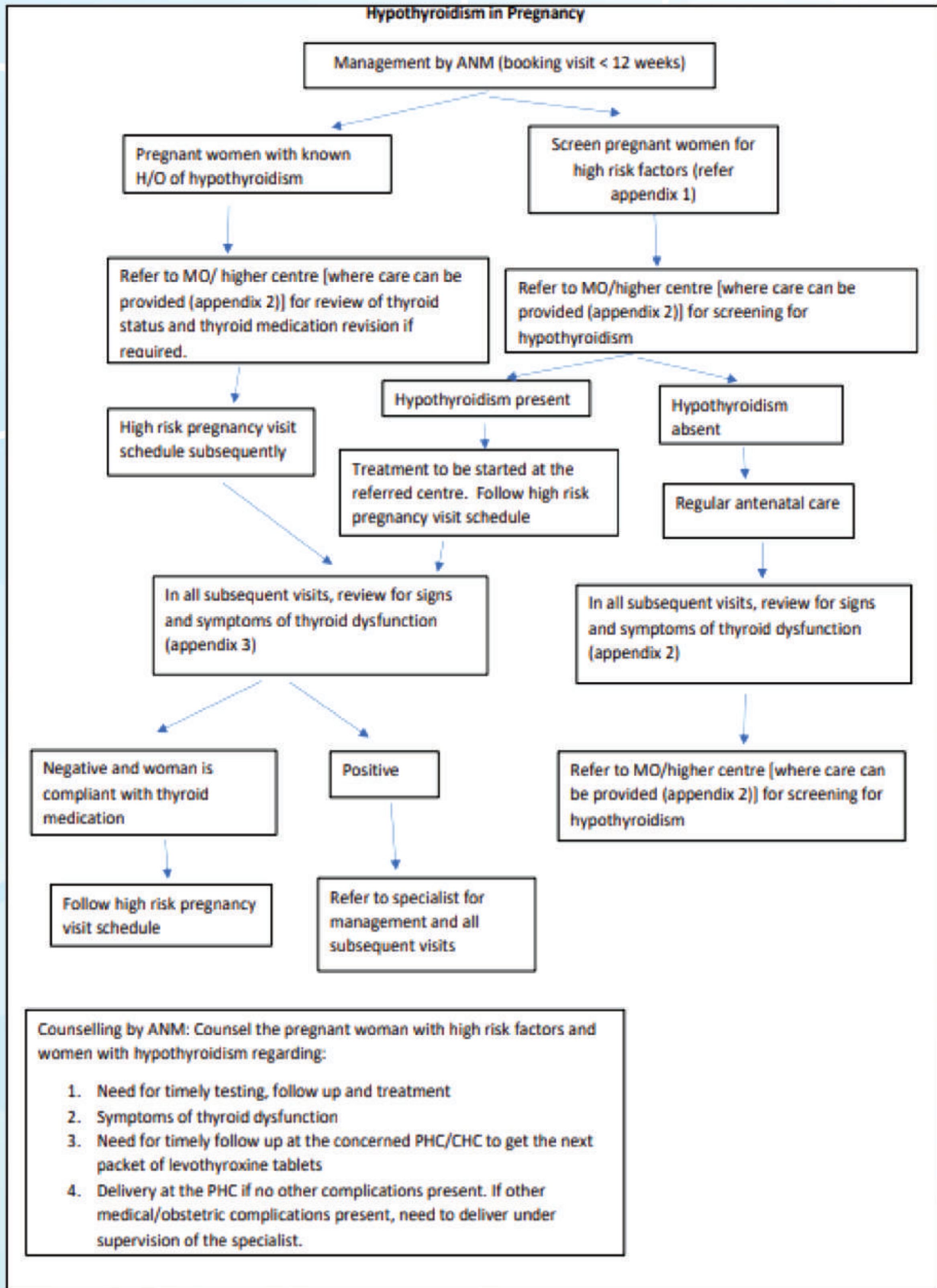
HYPOTHYROIDISM

Hypothyroidism means an under active thyroid gland. The following symptoms, signs and clinical finding should arise suspicion of hypothyroidism.

- Fatigue
- Increased sensitivity to cold
- Constipation
- Dry skin
- Weight gain
- Puffy face
- Hoarseness
- Muscle weakness
- Elevated blood cholesterol level
- Muscle aches, tenderness and stiffness
- Pain, stiffness or swelling in your joints
- Prior heavier than normal or irregular menstrual periods
- Thinning hair
- Slowed heart rate
- Depression
- Impaired memory
- Enlarged thyroid gland (goiter)

Screening for hypothyroidism in PW with following high risk factors

i. Residing in area of known moderate to severe iodine insufficiency
ii. Obesity
iii. History of prior thyroid dysfunction, goiter
iv. History of mental retardation in family/previous birth
v. History of recurrent miscarriage/still birth/preterm delivery/IUD/Abruptio placentae
vi. History of infertility


Hypothyroidism in Pregnancy
Management by ANM (booking visit < 12 weeks)
Pregnant women with known H/O of hypothyroidism
Screen pregnant women for high risk factors (refer appendix 1)
Refer to MO/ higher centre [where care can be provided (appendix 2)] for review of thyroid status and thyroid medication revision if required.
Refer to MO/higher centre [where care can be provided (appendix 2)] for screening for hypothyroidism
High risk pregnancy visit schedule subsequently
Hypothyroidism present
Hypothyroidism absent
Treatment to be started at the referred centre. Follow high risk pregnancy visit schedule
Regular antenatal care
In all subsequent visits, review for signs and symptoms of thyroid dysfunction (appendix 3)
In all subsequent visits, review for signs and symptoms of thyroid dysfunction (appendix 2)
Negative and woman is compliant with thyroid medication
Positive
Refer to MO/higher centre [where care can be provided (appendix 2)] for screening for hypothyroidism
Follow high risk pregnancy visit schedule
Refer to specialist for management and all subsequent visits
Counselling by ANM: Counsel the pregnant woman with high risk factors and women with hypothyroidism regarding:
1. Need for timely testing, follow up and treatment
2. Symptoms of thyroid dysfunction
3. Need for timely follow up at the concerned PHC/CHC to get the next packet of levothyroxine tablets
4. Delivery at the PHC if no other complications present. If other medical/obstetric complications present, need to deliver under supervision of the specialist.

TSH level	Current dose	Increase to
First Trimester		
>2.5	25	50
>2.5	50	75
>2.5	75	100
>2.5	100	125
Second/Third trimester		
>3	25	50
>3	50	75
>3	75	100
>3	100	125

Target range of TSH to be kept on follow-up after starting treatment:

- In first trimester: TSH <2.5
- In second/third trimester: TSH <3
- At all times, TSH <0.1 should be avoided by decreasing the dose of levothyroxine as follows:

TSH level	Present dose	Change to
<0.1	50	25
<0.1	75	50
<0.1	100	75
<0.1	25	12.5

Counsel the woman regarding treatment:

- Take tablets orally, in the morning on empty stomach (not to take anything orally at least for next half hour)
- Always store the medication in room temperature and avoid exposure to direct sun light or heat
- If dose is missed on one day, the patient may take the same as soon as she remembers and should not eat anything for the next half hour
- If she misses the tablet altogether, she should take double the dose on the next morning
- There are no side effects of treatment in the suggested/recommended doses

ANNEXURES

ANNEXURE-I

National Health Mission, Assam

(HIGH Risk Pregnant Women Detection & Follow UP Card)

(To be filled in CAPITAL by ANM/GNM during registration and antenatal checkup of the pregnant woman)

Name of PW RCH ID:	Age	Mob No.	LMP EDD	Name of Husband
SC/HWC: PHC: Block PHC:	Address		Nearest FRU	District

High risk factors of pregnant woman (Tick from below):

- Women who have delivered by caesarean section earlier
- Pregnancy with severe anemia (Hb less than 7gm/dL)
- Pregnancy Induced Hypertension (BP more than or equal to 140/90mm Hg)
- Antepartum hemorrhage
- Bad obstetric history (abortion/stillbirth/ IUD/APH/PPH etc. in previous pregnancy)
- Mal presentation
- Multiple pregnancy
- Grand multipara (more than or equal to 5 pregnancies)
- Elderly primi (more than or equal to 35 years of age in first pregnancy)
- Early primi (less than or equal to 19 years in first pregnancy)
- Short stature (height less than 145 cms)
- Pregnancy with HIV/Syphilis/Hepatitis B
- Rh Negative mother
- Gestational Diabetes Mellitus (GDM)
- Hypothyroidism

- Polyhydramnios
- Oligohydramnios
- Any other pre existing systemic disease

Following warning signs require immediate visit to the doctor/health facility

- Fever >38.5ºC/for more than 24 hours
- Swelling of the body and puffiness of face
- Pain in abdomen
- Reduced fetal movements
- Severe Headache, blurring of vision
- Palpitations, easy fatigability and breathlessness at rest
- Vaginal bleeding /leaking of water from vagina
- Fits/seizure/convulsion

In case of any of the above danger signs, take the pregnant women to the nearest FRU **IMMEDIATELY**

Date of ANC	Date of ANC	Institution where check up done	Weight	BP	HB	Urine albumin	Blood sugar	USG	Did ASHA accompany	Signature of Gynecologist/ MO
1st ANC										
2nd ANC										
3rd ANC										
4th ANC										
PMSMA/ePMSMA visits										
1st PMSMA/ ePMSMA										
2nd PMSMA/ ePMSMA										
3rd PMSMA/ ePMSMA										
4th PMSMA/ ePMSMA										

Signature of ASHA

Signature of ANM

(DISTRICT HEALTH SOCIETY,.......................................)

ANNEXURE-II

(Format for Micro-birth Plan)

Name of ASHA: | Contact no. of ASHA:
Name of ANM | Contact no. of ANM:
Name of CHO: | Contact no. of CHO
Name of Sectoral Medical Officer: | Contact no. of SMO
SC/HWC/TG Hosp: | Block: | District:

<table>
<tr><th>Name of the PW:
Contact number</th><th>Age:</th><th>LMP:
EDD:</th><th>Bank A/C No:</th></tr>
<tr><td>Husband/Guardian's name:

Husband/Guardian's contact no</td><td rowspan="2">Blood group:</td><td>Blood donors identified with blood group (Name & Contact No):
1.
2.
3.</td><td></td></tr>
<tr><td>Nearest 24x7 PHC:</td><td>Nearest FRU:
Distance from home:</td><td>Nearest USG center:</td></tr>
<tr><td>Birth Companion:
Name
Phone number</td><td></td><td></td><td></td></tr>
<tr><td colspan="4">Care giver at homeduring delivery:</td></tr>
<tr><td colspan="4">Name and contact number of VHSND/Community member for support during emergency</td></tr>
<tr><td colspan="4">Identified mode of transportation in case of labor pain
• 108 (Day):
• Vehicle to reach facility in case of unavailability at night:
Name of Driver:
Address of driver:
Phone number:</td></tr>
<tr><td colspan="4">Mode of transportation in case of referral to higher center
• 108 (Day):
• Vehicle to reach facility in case of unavailability at night:
Name of Driver:
Address of driver:
Phone number:</td></tr>
<tr><td colspan="4">Facility identified for delivery</td></tr>
<tr><td colspan="4">Mother and baby kit
MCP card   Aadhar card/ration card   Bank passbook
Investigation reports
Clean and dry towel   Clean cloth nappy   Clean cloth for baby, socks, cap
Clean and dried cloth for mother   Sanitary napkin for mother</td></tr>
<tr><td colspan="4">Maternity benefit schemes
JSY   TG-WCS   JSSK (free test/drugs/blood/transport/diet)</td></tr>
</table>

ANNEXURE-III

(Format for High Risk Pregnancy Register)

HRP REGISTER

Cause of HRP______________________________ RCH ID:____________________________

Date of HRP identification___________________

Name of PW			Age		Mob No.
Address	Name of Husband	Mob no. of husband	SC/HWC		PHC
Block PHC	Nearest Functional FRU		District		

History					
LMP EDD	Gravida	Parity	Is there any history of spontaneous/ induced abortion?	Was there previous LSCS	Was there any complication during last pregnancy?
Gap in years between previous and current pregnancy	Outcome of last delivery? Whether alive/ stillbirth/ infant death/child death? Give details			Is there any systemic disease? Specify	Blood group of PW

	ANC	ANC	ANC	ANC	PMSMA	1st ePMSMA	2nd ePMSMA	3rd ePMSMA
DATE								
Clinical Examination								
Gestational Age (wks)								
Pallor								
Pedal Oedema								
Weight (Kgs)								
BP								
Fundal Ht								
FHS								
Foetal movement								
Lie/Presentation								

Investigation								
Hb								
Urine albumin								
DATE								
Urine sugar								
Blood sugar								
Syphilis/ HIV								
USG main findings								
Tb screening								
Any other								
ANC services								
Td1								
Td2								
Td Booster								
No. of IFA tab provided								
No. of IFA tab consumed								
No. of Calcium tab provided								
No. of Calcium tab consumed								
Albendazole								
Management of identified HRP								
High Risk condition								
Treatment given								

Referral services

If Referral done, reasons			
Date and time of referral			
Where was she referred			
Mode of transportation			
Management at referral center			

Outcome of pregnancy

Mode of delivery	
Place of delivery	
Status of mother at 43rd day of delivery	
Is the baby born at term or pre term? If pre term then at how many weeks?	
Birth weight of baby (in Kgs)	

ANNEXURE-IV

Follow Up Card of High Risk Pregnant Women to check on any danger sign

Name of pregnant women: **EDD:** **Blood Group:**

SL. NO.	Danger signs	1st month	2nd month	3rd month	4th month	5th month	6th month	7th month	8th month	9th month
1	Weakness									
2	Breathing difficulty									
3	Convulsions									
4	Fever									
5	Abdominal pain									
6	Reduced fetal Mvt									
7	Headache									
8	Blurred vision									
9	Vaginal bleeding									
10	Dizziness/Fainting									
11	Severe nausea/vomiting									
12	Signature/ thumb impression of pregnant women									
Signature by MPW/CHO										

Tick √ for every yes.

On detection of any of the above mentioned danger signs or any other difficulties the pregnant women must be immediately referred to nearest health facility.

ANEMIA MANAGEMENT BY ANM

1 Additional History Specific to Anemia:

- No. of children (more than 3 children): Yes/No
- Spacing (less than 2 years of spacing): Yes/No
- History of PPH in previous pregnancies: Yes/No
- History of blood transfusion: Yes/No
- History of fever with chills: Yes/No

If yes to any two in combination refer to higher facility.

2 Examination at Every Visit:

- Pallor: (examine conjunctiva, nails, tongue, oral murcosa and palms): Yes/no
- Pedal edema/puffiness of face: Yes/No
- Pulse rate more than 100 bpm: Yes/No
- Respiratory rate more than 24 per minute: Yes/No
- Worm infestation (passing of worms): Yes/No
- Giddiness: Yes/No
- Fatigue: Yes/No
- Palpitations: Yes/No
- Shortness of breath (SOB): Yes/No

If yes to any one refer to higher facility.

3 Necessary Investigation:

- On testing of Hb at every visit by ANM using digital/Sahli haemoglobinometer:

If Hb is less than 9 gm/dl refer to higher facility.

4 Counselling to Every Woman with No Anemia:

- **On 1st Trimester**
  Folic acid one tablet daily.

- **On 2nd & 3rd Trimester**
  IFA one tablet twice daily, till Hb is 11g/dl.
  Deworming: Tab Albendazole 400 mg once during pregnancy period
  Advice on balance diet.

Repeat Hb after one month:
If Hb is 11 g/dl then one IFA tablet daily for 180 days
If Hb is less than 11 g/dl then refer to a Medical Officer

5 Dietary Counseling:

- Diet rich in proteins, iron, vitamin A, vitamin C, calcium and other micronutrients:
  E.g. Cereals, milk and milk products (curd and paneer), green leafy vegetables, pulses, eggs, meat (fish and poultry), groundnuts, ragi, jaggery and fruits.
- To avoid taking tea, coffee or milk within an hour after a meal.
- Foods rich in proteins and vitamin C (Eg. Lemon, amla, guava and oranges) help in the absorption of iron.

6 IFA Counseling:

- Inform about common side-effects like nausea, constipation and black stools.
- Check compliance by asking about black stools.
- Avoid taking IFA tablet along with milk.
- Explain the necessity of taking IFA tablets and the dangers associated with anaemia.
- Women should be advised to take IFA tablet immediately after food and calcium tablet 2 hours later.

7 When to Refer Checklist:

- Any pregnant woman with pallor and breathlessness (Respiratory rate more than 24/min) and or tachycardia (Pulse Rate more than 100 bpm).
- All pregnant woman with Hb less than 9g/dl.
- All pregnant women with mild anaemia who do not show rise in Hb level by 1 g/dl in repeat test after 1 month.
- All pregnant women who develop vomiting/severe nausea/diarrhea/severe constipation with IFA.

8 Follow Up:

ANM will guide the mother on the following:

- To continue oral iron therapy, balance diet.
- Family to be sensitised regarding nutritional needs of mother.

HYPERTENSIVE DISEASES DURING PREGNANCY

When BP is equal or more than 140/90 at any time of pregnancy, it is considered to be hypertensive.

Classification

- **Chronic Hypertension:** If a pregnant woman has hypertension before 20 weeks of gestation then it is classified as a case of chronic hypertension.
- **Pregnancy Induced Hypertension (PIH):** When hypertension in a pregnant woman develops after 20 weeks of gestation.
- **Pre-eclampsia:** It may be present with symptoms of headache, blurring of vision, epigastric pain or oliguria and oedema. It happens when the blood pressure is more or equal to 140/90 mmHg.
- **Eclampsia:** Eclampsia is the occurrence of generalised convulsion(s), usually associated with background of pre-eclampsia during pregnancy, labour or within seven days of delivery. However, it can occur even in women with normal BP, woman who is suffering from insomnia. Symptoms of eclampsia includes convulsions with more than or equal to 140/90 mmHg and proteinurea more than trace (more than grade 2).

Hypertension Management by ANM

1 Additional History Specific to Hypertension:

- Previous pregnancy losses: Yes/No
- High blood pressure in previous pregnancy: Yes/No
- Pre-eclampsia/eclampsia in previous pregnancy: Yes/No
- Pre-existing chronic hypertension, kidney disease, diabetes (on medications): Yes/No

3 On Examination:

- Excessive weight gain more than 0.5 kg/wk: Yes/No
- Oedema seen: Yes/No
- Blood Pressure more or equal to 140/90 mmHg: Yes/No
- Fundal height is less than gestational age: Yes/No

4 On Investigation:

- Urine protein 2+ or more (dipstick): Yes/No.
  If No than follow regular ANC schedule
  If Yes than counsel the pregnant woman and her family on the danger signs and symptoms of hypertension and then refer to a Medical Officer

2 Present Observation:

- Warning symptoms of pre-eclampsia: Yes/No
- Generalised oedema: Yes/No
- Sudden onset of headache: Yes/No
- Vomiting: Yes/No
- Pain in upper abdomen (epigastric): Yes/No
- Blurring of vision: Yes/No
- Decreased urine output: Yes/No
- Lack of sleep/insomnia: Yes/no

5 If on Any Visit:

Blood Pressure is equal or more than, 160/110 mmHg then

- Give Lebetalol 200 mg. tablet orally and Injection Magnesium Sulfate (MgSo4) 10 ml (5 gms) deep Intra Muscular (IM) in each buttock
- Counselling
- Refer to higher facility

Other Risk Factors ANM should observe:

- Age less than 20 years: Yes/No
- Age more than 35 years: Yes/No
- Overweight (BMI more than 25/obesity, BMI more than 30): Yes/No
- Primipara: Yes/No
- Pregnancy interval more than 10 years: Yes/No
- Family history of hypertension in mother/sister: Yes/No

Counselling by ANM:

- Explain about the warning signs in all patients with high risk factors
- Importance of daily foetal movement count
- Calcium supplementation: 500 mg calcium with vitamin D3 250 IU twice daily for 6 months antenatally after 1st trimester and 6 months during lactation for all pregnant women

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