**STANDARD TREATMENT WORKFLOW (STW)**

**Ante-Natal Management of Normal Pregnancy**

Reva Tripathi¹, Vinita Das², Manju Puri³, Radhika⁴, Neelam Aggarwal⁵, Asmita Rathore⁶, Aruna Kekre⁷, Dasari Papa⁸, Usha Rani⁹, Manika Khanna¹⁰, Neerja Bhatla¹¹, Seema Saran¹²

¹Maulana Azad Medical College (MAMC), New Delhi; ²King George’s Medical College, Lucknow; ³Lady Hardinge Medical College, New Delhi; ⁴University College of Medical Sciences, New Delhi; ⁵Postgraduate Institute of Medical Education and Research, Chandigarh; ⁶Maulana Azad Medical College (MAMC), New Delhi; ⁷Christian Medical College, Vellore; ⁸Jawaharlal Institute of Postgraduate Medical Education & Research, Puducherry; ⁹Institute of Obstetrics and Gynaecology, Chennai; ¹⁰NRIGS; ¹¹All India Institute Of Medical Science, New Delhi; ¹²Government Medical College Budaun

---

**CORRESPONDING AUTHOR**

Dr. Reva Tripathi, Department of OBS/GYN, Maulana Azad Medical College (MAMC), New Delhi.  
Email: revatripathi@gmail.com

**CITATION**

This work is licensed under a Creative Commons Attribution 4.0 International License.  
©The Author(s). 2024 Open Access

**DISCLAIMER**

This article/STW, was originally published by Indian Council of Medical Research (ICMR) under Standard Treatment Workflow. The reprinting of this article in Journal of the Epidemiology Foundation of India (JEFI) is done with the permission of ICMR. The content of this article is presented as it was published, with no modifications or alterations. The views and opinions expressed in the article are those of the authors and do not necessarily reflect the official policy or position of JEFI or its editorial board. This initiative of JEFI to reprint STW is to disseminate these workflows among Health Care Professionals for wider adoption and guiding path for Patient Care.

---

**Standard Treatment Workflow (STW) for ANTE-NATAL MANAGEMENT OF NORMAL PREGNANCY**

**FIRST VISIT (PREFERABLY IN FIRST TRIMESTER)**

<table>
<thead>
<tr>
<th>ASK</th>
<th>EXAMINE</th>
<th>INVESTIGATIONS</th>
<th>DO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Height, weight</td>
<td>ESSENTIAL TESTS</td>
<td>UPT if in doubt</td>
</tr>
<tr>
<td>LMP</td>
<td>Calculate BMI</td>
<td>- Hemoglobin</td>
<td>- Fill up MCH</td>
</tr>
<tr>
<td>Parity &amp; obstetric history</td>
<td>Pailor, Jaundice, Pedal edema</td>
<td>- Urine R &amp; M</td>
<td>protection card or</td>
</tr>
<tr>
<td>Any complaints especially excessive</td>
<td>Pulse, BP, RR, temperature</td>
<td>- ABO &amp; Rh grouping</td>
<td>ANC card, make entry</td>
</tr>
<tr>
<td>nausea &amp; vomiting / bleeding PV</td>
<td>Thyroid</td>
<td>DESIRABLE TESTS</td>
<td>on RCH portal &amp;</td>
</tr>
<tr>
<td>H/o medical illness : diabetes,</td>
<td>Breast</td>
<td>- VDRL/ VPR</td>
<td>generate RCH</td>
</tr>
<tr>
<td>hypertension, cardiac problem,</td>
<td>Respiratory and CVS examination</td>
<td>- HIV</td>
<td>number (in public</td>
</tr>
<tr>
<td>epilepsy or any other chronic illness</td>
<td>P/A examination, P/S and P/V examination</td>
<td>- HBAg</td>
<td>sector)</td>
</tr>
<tr>
<td>Consequences, multiple pregnancy</td>
<td># If woman presents with</td>
<td>- WHO OCTT/ DIPSI test for diagnosis of</td>
<td>- Give filled MCH</td>
</tr>
<tr>
<td>H/o blood transfusion and H/o prior</td>
<td>bleeding per vaginum do P/A &amp;</td>
<td>CDAM</td>
<td>protection card &amp; safe</td>
</tr>
<tr>
<td>surgical intervention</td>
<td>P/V to confirm amount of</td>
<td>- TSH in high risk cases (BOH, goiter, obesity</td>
<td>motherhood booklet</td>
</tr>
<tr>
<td>Personal history : tobacco/ alcohol intake</td>
<td>bleeding &amp; rule out local cases. All such cases to be referred to</td>
<td>or residing in iodine deficiency prone areas</td>
<td>to woman</td>
</tr>
<tr>
<td>Family history : diabetes, hypertension,</td>
<td></td>
<td>OPTIONAL TESTS*</td>
<td>- Give Tab Folic Acid</td>
</tr>
<tr>
<td>genetic disorders/ congenital</td>
<td></td>
<td>Aneuploidy screen* by USG &amp; double marker</td>
<td>daily</td>
</tr>
<tr>
<td>problems, multiple pregnancy,</td>
<td></td>
<td></td>
<td>- Give first dose of tetanus toxoid</td>
</tr>
<tr>
<td>infections including tuberculosis</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SECOND VISIT (SECOND TRIMESTER)**

<table>
<thead>
<tr>
<th>ASK</th>
<th>EXAMINE</th>
<th>INVESTIGATIONS</th>
<th>DO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Take Trimester 2 tablets and follow-up next month</td>
</tr>
</tbody>
</table>

---

**部门健康研究部**

**印度卫生与家庭福利部，政府印度**
## Standard Treatment Workflow (STW) for Ante-Natal Management of Normal Pregnancy

### FIRST VISIT (PREFERABLY IN FIRST TRIMESTER)

**ASK**
- Age
- LMP
- Family & obstetric history
- Any complaints especially nausea & vomiting, bleeding PV
- Hb, blood pressure, diabetes, hypertension, cardiac problem, dyspnoea or any other medical history
- Consanguinity, multiple pregnancy
- 6 weeks blood transfusion and 6 weeks prior surgical intervention
- Personal history: tobacco/alcohol intake
- Family history: diabetes, hypertension, genetic disorders, congenital problems, multiple pregnancies, infections including tuberculosis

**EXAMINE**
- Height, weight
- Build
- Pulse, BP, PR
- Temperature
- Respiration
- Respiratory and CVS examination
- PIA examination, FIS and PV examination
  - If women presents with bleeding per vaginum do PIA & FIS to confirm amount of bleeding & rule out local clots. All such cases should be referred to GMC or higher centre

**INVESTIGATIONS**
- Essential tests
  - Hemoglobin
  - Urine albumin
  - USG (Level I between 18-20 weeks for gross congenital malformations)
  - WHO OCT/DIPS test if ≥24 weeks & at least 4 weeks have elapsed after last

**ESSENTIAL TESTS**
- Hb
- Urine albumin
- Optional USG for fetal growth and hydration

**DO**
- UPT if in doubt
- FIT up MCH protection card or ANC card. Make entry on RCH portal & generate RCH number (in public sector)
- Give filip MCH protection card & safe motherhood booklet (in home)
- Give Tab Papi Acid daily
- First dose of tetanus toxoid

### SECOND VISIT (SECOND TRIMESTER)

**ASK**
- Any complaints, vena last visit
- Quickening and/or fetal movements
- Adherence to medications

**EXAMINE**
- Weight
- Height
- Pulses, BP
- Urine albumin
- PIA examination for fundal height

**INVESTIGATIONS**
- Essential tests
- Hemoglobin
- Urine albumin
- USG

**ESSENTIAL TESTS**
- Hb
- Urine albumin
- Optional USG for fetal growth and hydration

**DO**
- If Hb <10 g/dl or toxemia (if Hb <9 g/dl daily with water or lemon juice)
- Calcium carbonate 500 mg with vitamin D 2000 IU tabber twice daily with meals
- Calcium carbonate & HFA to be given together
- Single dose of Albendazole 400mg
- Error compliance for investigations and treatment
- Discuss birth preparedness
- Give second dose Tetanus Tossid at least four weeks after first dose

### THIRD (20-34 WEEKS) AND FOURTH VISIT (36-40 WEEKS)

**ASK**
- Same as above

**EXAMINE**
- Same as above
- Auscultate PMS
- Measurement of abdominal girth and Symphyseal height

**INVESTIGATIONS**
- Hemoglobin
- Urine albumin
- Additional USG for fetal growth and hydration

**ESSENTIAL TESTS**
- Hb
- Urine albumin
- Optional USG for fetal growth and hydration

**DO**
- Continue IFA and calcium tablets and ensure compliance
- Prenatal care: At 8-10 weeks give prenatal vitamin/therapy (not < 200mg at one time & not > 3 times a week) and refer patient with Hb < 7g/dl to higher centre
- Refer to higher centre if any discrepancy between fundal height and period of gestation

### DANGER SIGNALS FOR PATIENT TO REPORT TO HEALTH FACILITY
- Fever
- Persistent vomiting
- Abnormal vaginal discharge
- Polyhydramnios, say febrility and breathlessness at rest and/or on mild exertion
- Generalized swelling of the body/puffiness of the face
- Vaginal bleeding
- Decreased or absent fetal movements at ≥28 weeks gestation
- Platelet count below 100,000/mm³
- Sudden shortness of breath
- Severe headaches
- Rapid breathing
- Convulsion
- Heavy bleeding of urine and/or burning sensation during micturition
- Itching all over the body

### HIGH RISK PREGNANCY
- Any of medical illnesses, previous caesarean section, past obstetric complications or mental/physical malformation
- PPH
- Age ≥ 35 years or < 15 years of parity
- MIH: Maternal weight: >200kg or < 30 kg
- Hemoglobin < 7 g/dl
- BP: 140/90 mmHg or 2 attacks of 6 hours apart
- APH: Antepartum hemorrhage: fundal height and period of gestation > 6 weeks
- CDNM: caesarean division
- Previous abortion
- Previous stillbirth

### COUNSELLING AT ALL LEVELS FOR:
- Timing and place of next ANC visit based on presence or absence of risk factors
- Breastfeeding, balanced diet and exercise
- Counselling for HIV testing
- Danger signs
- Institutional delivery
- Birth preparedness
- Early & exclusive breastfeeding for six months
- PPH: Post partum haemorrhage

### ASSESSMENT OF FUNDAL HEIGHT & ITS CORRELATION WITH GESTATIONAL AGE

<table>
<thead>
<tr>
<th>Week</th>
<th>Fetal fundal height (in cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>20</td>
<td>22</td>
</tr>
<tr>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td>32</td>
<td>34</td>
</tr>
<tr>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>40</td>
<td>42</td>
</tr>
</tbody>
</table>

**UMBILICUS**

**COUNSELLING IS AN IMPORTANT ADJUNCT TO MANAGEMENT**

- Keep a high threshold for invasive procedures

---

*This STW has been prepared by national experts of India with feasibility considerations for various levels of healthcare systems in the country. These guidelines are advisory, and are based on expert consensus among all individual patient treatment and should be revised and updated regularly. They may not be applicable in the management of an individual patient because of their specific condition, as decided by the treating physician. There will be no indemnity for direct or indirect consequences. Kindly visit our website: bit.ly/AntiNatalManagement for more information.*

© 2024 JEFI S36