Best Practices in Maternal and Newborn Care:
A Learning Resource Package for Essential and Basic Emergency Obstetric and Newborn Care

Participant’s Guide
BEST PRACTICES IN MATERNAL AND NEWBORN CARE:
A LEARNING RESOURCE PACKAGE FOR ESSENTIAL AND
BASIC EMERGENCY OBSTETRIC AND NEWBORN CARE

PARTICIPANT’S GUIDE

ACKNOWLEDGMENTS

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Final Evaluation Form

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ACKNOWLEDGMENTS

This *Best Practices in Maternal and Newborn Care: Learning Resource Package for Essential and Basic Emergency and Newborn Care* is the result of a significant collaboration among many health care professionals, and has undergone extensive review, field-testing and revision.

Barbara Deller of Jhpiego led the efforts to complete the package. Diana Beck and Annie Clark of the American College of Nurse-Midwives (ACNM), Frances Ganges and a team of other trainers worked tirelessly in contributing to the development and field-testing of these materials. Patricia Gomez of Jhpiego/ACCESS Program provided technical assistance throughout the process. Several of the handouts in the Breastfeeding Module, as well as the Appendix on Making Cloth Models, were developed by Annie Clark.

The original draft of the module on Nutrition was developed by Eleonore Seumo/Academy for Educational Development.

We would like to thank the trainers and participants involved in the field-testing in Ethiopia, Ghana, Malawi and Tanzania. Thanks also to Dana Lewison of Jhpiego for editorial assistance.

We are hopeful that these materials will be useful for those working together to improve maternal and newborn care around the world.
# 2-WEEK AND 3-WEEK WORKSHOP SCHEDULES

### Best Practices in Maternal and Newborn Care: 2-Week Workshop Schedule for Pre-service Faculty/Tutors

<table>
<thead>
<tr>
<th>Time</th>
<th>DAY 1 MONDAY</th>
<th>DAY 2 TUESDAY</th>
<th>DAY 3 WEDNESDAY</th>
<th>DAY 4 THURSDAY</th>
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<tbody>
<tr>
<td>0630</td>
<td><strong>Course Orientation:</strong>&lt;br&gt;• Opening, Welcome, Introductions&lt;br&gt;• Pre-test (45 minutes)&lt;br&gt;• Objectives&lt;br&gt;• Expectations-trainers/participants&lt;br&gt;• Workshop Schedule&lt;br&gt;<strong>Illustrated Presentation/Discussion:</strong> Approach to Training</td>
<td>Rounds: Teams 1 and 2</td>
<td>Rounds: Teams 1 and 2</td>
<td>Rounds: Teams 3 and 4</td>
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<tr>
<td>0800</td>
<td><strong>Course Orientation:</strong>&lt;br&gt;• Opening, Welcome, Introductions&lt;br&gt;• Pre-test (45 minutes)&lt;br&gt;• Objectives&lt;br&gt;• Expectations-trainers/participants&lt;br&gt;• Workshop Schedule</td>
<td><strong>Demonstration/Skills practice:</strong> Labor and Birth + partograph practice as needed</td>
<td><strong>Report:</strong> Teams 1 and 2</td>
<td><strong>Report:</strong> Teams 3 and 4</td>
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<tr>
<td>0845</td>
<td><strong>Illustrated Presentation/Discussion:</strong> Birth in the Squatting Position</td>
<td><strong>Illustrated Presentation/Discussion:</strong> Infection Prevention</td>
<td><strong>Demonstration/Skills Practice:</strong> Newborn with problems</td>
<td><strong>Demonstration/Skills Practice:</strong> Newborn Resuscitation</td>
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<td>1000</td>
<td><strong>Break</strong></td>
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<tr>
<td>1015</td>
<td><strong>Course Orientation</strong> (cont.)&lt;br&gt;• Using Learning Guide and Checklist&lt;br&gt;• Team Assignments, On-call&lt;br&gt;• Skills record&lt;br&gt;• Rounds Report&lt;br&gt;• Responsibilities in L&amp;D&lt;br&gt;• Tour hospital</td>
<td><strong>Video:</strong> Suturing and Knot Tying&lt;br&gt;Skills practice: Labor &amp; Birth, including episiotomy and repair</td>
<td><strong>Demonstration and Skills Practice:</strong> Infection Prevention</td>
<td><strong>Skills Practice</strong> (cont): Newborn Resuscitation</td>
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<td>1200</td>
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<tr>
<td>1300</td>
<td><strong>Illustrated Presentation/Discussion:</strong> Maternal and Neonatal Mortality&lt;br&gt;<strong>Illustrated Presentation/Discussion:</strong> Labor and Childbirth, including Partograph Exercises</td>
<td><strong>Illustrated Presentation/Discussion/Group Work:</strong> Clinical Decision-Making</td>
<td><strong>Emergency Drill</strong></td>
<td><strong>Demonstration/Skills Practice:</strong> Repair of Lacerations, Manual Removal of Placenta, Internal Bimanual Compression, Aortic Compression</td>
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## Best Practices in Maternal and Newborn Care: 2-Week Workshop Schedule for Pre-service Faculty/Tutors

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<th>Time</th>
<th>DAY 1 MONDAY</th>
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<th>DAY 4 THURSDAY</th>
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<tbody>
<tr>
<td>1515</td>
<td><strong>Skills Practice:</strong> Partograph</td>
<td><strong>Review of Pretest</strong></td>
<td><strong>Demonstration/Skills Practice:</strong> Immediate Newborn Care</td>
<td><strong>Skills Practice:</strong> Bleeding after childbirth (continued)</td>
</tr>
<tr>
<td>1630</td>
<td>Homework: BMNC Chapter 6, Labor/Childbirth Care, pages 2-37 to 2-82, and Annex, pages 4-7 to 4-9, and Clinical Decision-Making, pages 1-41 to 1-42 Partograph, IMPAC, pages S-57 to S-67 BMNC, Interpersonal Skills, pages 1-42 to 1-47</td>
<td>Homework: MNC, Repair episiotomy and repair 1st and 2nd degree vaginal and perineal tears, pages 4-37 to 4-40, and IMPAC, pages P-83 to P-85, and BMNC, Infection Prevention, pages 1-47 to 1-57, and IMPAC, pages C-17 to C-22 BMNC, Chapter 8, Newborn Care, pages 2-109 to 2-135</td>
<td>Homework: IMPAC, Vaginal Bleeding after Childbirth, pages S-25 to S-34 BMNC, Manual removal, pages 4-22 to 4-24, and 3-103 to 3-110 BMNC, Management of Uterine Atony, page 3-105 BMNC, Repair of Cervical Tears, page 4-36 and IMPAC, page P-81</td>
<td>Homework: Newborn Resuscitation, BMNC, pages 3-99 to 3-101, and IMPAC, pages S-142 to S-146 ANC, BMNC, pages 2-5 to 2-36; Postpartum Contraception, BMNC, pages 4-54 to 4-59 BMNC, Chapter 9, Common Discomforts and Concerns, pages 3-1 to 3-24</td>
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<td>1630</td>
<td>Trainer Meeting</td>
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<td>1930</td>
<td>On-Call: Team 1 and 2</td>
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<td>On-Call: Team 5 and 6</td>
<td>On-Call: Team 5 and 6</td>
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<td>0630</td>
<td>Rounds: Teams 5 and 6</td>
<td>Rounds: Teams 7 and 8</td>
<td>Rounds: Teams 1 and 2</td>
<td>Rounds: Teams 3 and 4</td>
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<tr>
<td>0845</td>
<td>Illustrated Presentation/ Discussion: Antenatal Care, including pregnancy calculation</td>
<td>Illustrated Presentation/ Discussion: Postpartum Care</td>
<td>Illustrated Presentation/ Discussion: Kangaroo Mother Care</td>
<td>Illustrated Presentation/ Discussion: Postpartum Fever</td>
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<tr>
<td>1015</td>
<td>Demonstration/Practice: Pregnancy calculation</td>
<td>Illustrated Presentation/ Discussion: Breastfeeding NOTE: You may delete this presentation and use the session for practice if you feel the BF content in PPC is sufficient.</td>
<td>Skills practice (cont): Skills in which individual participants are not competent</td>
<td>Skills practice (cont): Skills in which individual participants are not competent</td>
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<td>1300</td>
<td>Illustrated Presentation/ Discussion: Malaria in Pregnancy Illustrated Presentation/ Discussion: PMTCT Illustrated Presentation/ Discussion: Postpartum Family Planning Illustrated Presentation/ Discussion: Birth Assisted with Vacuum Extractor Skills Practice: Birth with Vacuum Extractor Clinical</td>
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<td>1515</td>
<td>Demonstration/Skills Practice (cont): ANC, including pregnancy calculation</td>
<td>Demonstration/Skills Practice: Postpartum Care, including breastfeeding</td>
<td>Illustrated Presentation/Discussion: Headaches, Hypertension, Convulsions</td>
<td>Clinical (cont.)</td>
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<tr>
<td>1630</td>
<td>Homework: Complete Mid-training Evaluation</td>
<td>Homework: BMNC Breastfeeding Problems, pages 3-43 to 3-46. Review BPMNC PowerPoint slides on Kangaroo Care, Module 17, slides 33 to 38</td>
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<tr>
<td>1630</td>
<td>Read: BMNC, Life-Threatening Complications, pages 3-89 to 3-93, and Chapter 7, Postpartum Care, pages 2-83 to 2-108, and Breastfeeding support, pages 4-47 to 4-52 IMPAC S-1 to S-5 and C-15 to C16</td>
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<td>1630</td>
<td>Homework: BMNC, Convulsions, etc., pages 3-93 to 3-95, and IMPAC, pages S-35 to S-50</td>
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<td>1930</td>
<td>On-Call: Teams 7 and 8</td>
<td>On-Call: Teams 1 and 2</td>
<td>On-Call: Teams 3 and 4</td>
<td>On-Call: Teams 5 and 6</td>
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<td>Rounds: Teams 7 and 8</td>
<td>Rounds: Team (as needed)</td>
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<td>0800</td>
<td>Report: Teams 5 and 6</td>
<td>Report: Teams 7 and 8</td>
<td>Report: Team (as needed)</td>
<td>Report: Team (as needed)</td>
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</table>
| 0845  | Clinical | Clinical | Clinical | Individual Participant Skill Checkout:  
- Infant Resuscitation  
- Manual Removal of Placenta  
- Internal/External Bimanual Compression  
- Active Management of Third Stage Labor  
- Post-Test |
| 1000  | Break | Break | Break | Break |
| 1015  | Clinical (cont.) | Clinical (cont.) | Clinical (cont.) | \- Review of Participant Evaluation  
\- Review of Post-Test |
| 1200  | Lunch | Lunch | Lunch | Lunch (closing) |
| 1300  | Clinical (cont.) | Clinical (cont.) | Practice skills if time  
Begin skill checkout if participant’s ready | Meeting with trainers, participants and selected stakeholders to discuss the Pre-service Initiative accomplishments, challenges and future plans |
| 1500  | Break | Break | Break | Break |
| 1515  | Clinical (cont.) | Review session for skills checkout | Post-Test  
Practice opportunity | |
| 1630  | Homework: Complete reading assignments | Homework: Complete reading assignments | Homework: Complete Final Evaluation  
Complete reading assignments | |
| 1730  | Adjourn | Adjourn | Adjourn | |
| 1930  | On-Call: Teams 7 and 8 | On-Call: As needed | On-Call: As needed | |

Notes:
● Time for clinical practice may be changed if there are clients in labor or if a clinic has specific hours of operation.
● Skill checkout can happen for participants at any point they feel ready.
● Experience in ANC and PP clinic must happen after the classroom work on antenatal care and postpartum care, respectively.
● The lead trainer will be on-call with trainers and participants on alternate days from 7 PM. until 10 PM. Trainers and participants will be on call throughout the training starting on Day 2 to take full advantage of clinical experiences. On-call assignments will be made on Day 1.
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<thead>
<tr>
<th>Time</th>
<th>DAY 1 MONDAY</th>
<th>DAY 2 TUESDAY</th>
<th>DAY 3 WEDNESDAY</th>
<th>DAY 4 THURSDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Course Orientation:</strong></td>
<td><strong>Illustrated Presentation/Discussion:</strong> Labor and Childbirth</td>
<td><strong>Discussion:</strong> Women-friendly care</td>
<td><strong>Presentation/Group Work/Discussion:</strong> Newborn with Problems</td>
</tr>
<tr>
<td>0630</td>
<td><strong>0800</strong> **Illustrated <strong>Presentation/Discussion:</strong> Labor and Childbirth</td>
<td><strong>Illustrated Presentation/Discussion:</strong> Birth in the Squatting Position</td>
<td><strong>Illustrated Presentation/Group Work:</strong> Clinical Decision-Making</td>
<td><strong>Demonstration/Skills Practice:</strong> Newborn Resuscitation</td>
</tr>
<tr>
<td></td>
<td>• Opening</td>
<td>• Objectives</td>
<td>• <strong>Discussion:</strong> Women-friendly care</td>
<td>• <strong>Demonstration/Skills Practice:</strong> Newborn Resuscitation</td>
</tr>
<tr>
<td></td>
<td>• Pre-test (45 minutes)</td>
<td>• Expectations: trainers/participants</td>
<td>• <strong>Discussion:</strong> Clinical Decision-Making</td>
<td>• <strong>Demonstration/Skills Practice:</strong> Newborn Resuscitation</td>
</tr>
<tr>
<td></td>
<td>• Objectives</td>
<td>• Workshop Schedule</td>
<td>• <strong>Discussion:</strong> Newborn with Problems</td>
<td>• <strong>Demonstration/Skills Practice:</strong> Newborn Resuscitation</td>
</tr>
<tr>
<td></td>
<td>• Expectations: trainers/participants</td>
<td>• <strong>Discussion:</strong> Newborn with Problems</td>
<td>• <strong>Discussion:</strong> Newborn with Problems</td>
<td>• <strong>Demonstration/Skills Practice:</strong> Newborn Resuscitation</td>
</tr>
<tr>
<td></td>
<td>• Workshop Schedule</td>
<td>• <strong>Discussion:</strong> Newborn with Problems</td>
<td>• <strong>Discussion:</strong> Newborn with Problems</td>
<td>• <strong>Demonstration/Skills Practice:</strong> Newborn Resuscitation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Workshop Schedule</td>
<td>• <strong>Discussion:</strong> Newborn with Problems</td>
<td>• <strong>Demonstration/Skills Practice:</strong> Newborn Resuscitation</td>
</tr>
<tr>
<td>0845</td>
<td>**Illustrated <strong>Presentation/Discussion:</strong> Immediate Newborn Care</td>
<td><strong>Illustrated Presentation/Role Play/Discussion:</strong> Immediate Newborn Care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0900</td>
<td>**Illustrated <strong>Presentation/Discussion:</strong> Approach to training</td>
<td></td>
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</tr>
<tr>
<td>1000</td>
<td><strong>Course Orientation</strong> (cont.):</td>
<td><strong>Skills Practice:</strong> Immediate Newborn Care</td>
<td><strong>Illustrated Presentation/Discussion:</strong> Infection Prevention</td>
<td><strong>Illustrated presentation/Discussion:</strong> Kangaroo Mother Care</td>
</tr>
<tr>
<td></td>
<td>• Using Learning Guide and Checklist</td>
<td>• Video: Suturing and Knot Typing</td>
<td>• <strong>Illustrated Presentation/Discussion:</strong> Infection Prevention</td>
<td>• <strong>Illustrated presentation/Discussion:</strong> Kangaroo Mother Care</td>
</tr>
<tr>
<td></td>
<td>• Team Assignments, On-call</td>
<td>• Skills Practice (cont.) Labor and Birth, including episiotomy, repair; immediate newborn care</td>
<td>• <strong>Demonstration and Practice:</strong> Infection Prevention</td>
<td>• <strong>Demonstration/Skills Practice:</strong> Kangaroo Mother Care</td>
</tr>
<tr>
<td></td>
<td>• Skills record</td>
<td>• **Skills Practice (cont.): Labor and Birth, including episiotomy, repair; immediate newborn care</td>
<td>• <strong>Demonstration and Practice:</strong> Infection Prevention</td>
<td>• <strong>Demonstration/Skills Practice:</strong> Kangaroo Mother Care</td>
</tr>
<tr>
<td>1015</td>
<td>• Rounds Report</td>
<td>• <strong>Illustrated Presentation/Discussion:</strong> Approach to training</td>
<td>• <strong>Demonstration and Practice:</strong> Infection Prevention</td>
<td>• <strong>Demonstration/Skills Practice:</strong> Kangaroo Mother Care</td>
</tr>
<tr>
<td></td>
<td>• Responsibilities in Labor and Delivery (L&amp;D)</td>
<td></td>
<td>• <strong>Demonstration and Practice:</strong> Infection Prevention</td>
<td>• <strong>Demonstration/Skills Practice:</strong> Kangaroo Mother Care</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>• <strong>Demonstration and Practice:</strong> Infection Prevention</td>
<td>• <strong>Demonstration/Skills Practice:</strong> Kangaroo Mother Care</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>• <strong>Demonstration and Practice:</strong> Infection Prevention</td>
<td>• <strong>Demonstration/Skills Practice:</strong> Kangaroo Mother Care</td>
</tr>
<tr>
<td>1200</td>
<td><strong>Illustrated Presentation/Discussion:</strong> Maternal and Neonatal Mortality Reduction</td>
<td><strong>Skills Practice:</strong> Labor and Birth, including partograph, episiotomy, repair; immediate newborn care</td>
<td><strong>Illustrated Presentation/Discussion:</strong> Rapid Initial Assessment and Shock Emergency Drill</td>
<td><strong>Demonstration/Skills Practice:</strong> Assisted Vaginal Delivery and Use of Vacuum Extractor</td>
</tr>
<tr>
<td></td>
<td><strong>Illustrated Presentation/Discussion:</strong> Evidence-based medicine</td>
<td><strong>Skills Practice:</strong> Labor and Birth, including partograph, episiotomy, repair; immediate newborn care</td>
<td><strong>Illustrated Presentation/Discussion:</strong> Rapid Initial Assessment and Shock Emergency Drill</td>
<td><strong>Skills Practice:</strong> Use of Vacuum Extractor</td>
</tr>
<tr>
<td>1300</td>
<td><strong>Illustrated Presentation/Discussion:</strong> Evidence-based medicine</td>
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</tr>
<tr>
<td>1500</td>
<td><strong>Illustrated Presentation/Discussion:</strong> Partograph</td>
<td><strong>Review of Pre-test</strong></td>
<td><strong>Video:</strong> Delivery Self Attachment with emphasis on Immediate Care of</td>
<td><strong>Illustrated Presentation/Group Work/Discussion:</strong> Bleeding after childbirth</td>
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<td></td>
<td><strong>Tour hospital</strong></td>
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</tr>
<tr>
<td>1515</td>
<td><strong>Illustrated Presentation/Discussion:</strong> Partograph</td>
<td><strong>Review of Pre-test</strong></td>
<td><strong>Video:</strong> Delivery Self Attachment with emphasis on Immediate Care of</td>
<td><strong>Illustrated Presentation/Group Work/Discussion:</strong> Bleeding after childbirth</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Tour hospital</strong></td>
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</tr>
</tbody>
</table>
### Best Practices in Maternal and Newborn Care: 3-Week Workshop Schedule for Pre-Service Faculty/Tutors

<table>
<thead>
<tr>
<th>Time</th>
<th>DAY 1 MONDAY</th>
<th>DAY 2 TUESDAY</th>
<th>DAY 3 WEDNESDAY</th>
<th>DAY 4 THURSDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Practice: Partograph</td>
<td>Homework:</td>
<td>Homework:</td>
<td>Homework:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BMNC, Chapter 6, Labor/Childbirth Care, pages 2-37 to 2-82, and Annex, pages 4-7 to 4-9, and Clinical Decision-Making, pages 1-41 to 1-42</td>
<td>BMNC, Repair episiotomy and repair 1st and 2nd degree vaginal and perineal tears, pages 4-37 to 4-40, and IMPAC pages P-83 to P-85</td>
<td>BMNC, Chapter 8, Newborn Care, pages 2-109 to 2-135 Newborn Resuscitation, BMNC, pages 3-99 to 3-101 and IMPAC, pages S-142 to S-146</td>
</tr>
<tr>
<td>1630</td>
<td></td>
<td>Partograph, IMPAC, pages S-57 to S-67</td>
<td>BMNC, Infection Prevention, pages 1-47 to 1-57, and IMPAC, pages C-17 to C-22</td>
<td>BMNC, Vaginal Bleeding after Childbirth, pages S-25 to S-34 BMNC, Manual removal, pages 4-22 to 4-24 and 3-103 to 3-110 BMNC, Management of Uterine Atony, page 3-105 BMNC, Repair of Cervical Tears, page 4-36 and IMPAC, page P-81</td>
</tr>
<tr>
<td>1630</td>
<td>Trainer Meeting</td>
<td>Trainer Meeting</td>
<td>Trainer Meeting</td>
<td>Trainer Meeting</td>
</tr>
<tr>
<td>1730</td>
<td>Adjourn</td>
<td>Adjourn</td>
<td>Adjourn</td>
<td>Adjourn</td>
</tr>
<tr>
<td>1930</td>
<td>On-Call: Teams 1 and 2</td>
<td>On-Call: Teams 3 and 4</td>
<td>On-Call: Teams 5 and 6</td>
<td></td>
</tr>
<tr>
<td>TIME</td>
<td>DAY 5 FRIDAY</td>
<td>DAY 6 SATURDAY</td>
<td>SUNDAY</td>
<td>DAY 7 MONDAY</td>
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<tr>
<td>0630</td>
<td>Rounds: Teams 1 and 2</td>
<td>Rounds: Teams 3 and 4</td>
<td>Rounds: Teams 5 and 6</td>
<td>Rounds: Teams 7 and 8</td>
</tr>
<tr>
<td>1000</td>
<td>Break</td>
<td>Break</td>
<td>Break</td>
<td>Break</td>
</tr>
<tr>
<td>1015</td>
<td>Skills Practice: Repair of Periurethral, Sulcus and Cervical Lacerations, Manual Removal of Placenta, Internal Bimanual Compression, Aortic Compression</td>
<td>Discussion: Birth preparedness/complication readiness</td>
<td>Demonstration/Skills Practice: Postpartum Care, including Breastfeeding</td>
<td>Skills Practice (cont.): MVA</td>
</tr>
<tr>
<td>1200</td>
<td>Lunch</td>
<td>Lunch</td>
<td></td>
<td>Lunch</td>
</tr>
<tr>
<td>1300</td>
<td>Illustrated Presentation/Discussion: Malaria in Pregnancy</td>
<td>Illustrated Presentation/Group Work/Discussion: PMTCT</td>
<td>Illustrated Presentation/Discussion: Postpartum Family Planning</td>
<td>Illustrated Presentation/Discussion: Bleeding in Late Pregnancy</td>
</tr>
<tr>
<td></td>
<td>Illustrated Presentation/Discussion: Antenatal care including pregnancy calculation</td>
<td>Demonstration/Skills Practice: ANC with pregnancy calculations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIME</td>
<td>DAY 5 FRIDAY</td>
<td>DAY 6 SATURDAY</td>
<td>SUNDAY</td>
<td>DAY 7 MONDAY</td>
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<td>--------------</td>
</tr>
<tr>
<td>1500</td>
<td>Break</td>
<td>Break</td>
<td>Break</td>
<td>Break</td>
</tr>
<tr>
<td>1515</td>
<td>Illustrated Presentation/ Discussion: Antenatal Care with pregnancy calculations</td>
<td>Skills Practice (cont.) ANC, pregnancy calculation</td>
<td>Illustrated Presentation/Discussion: Postpartum Fever</td>
<td>Illustrated Presentation/ Group Work/Discussion: Headaches, Hypertension, Convulsions</td>
</tr>
<tr>
<td>1630</td>
<td>Homework: BMNC, Chapter 7, Postpartum Care, pages 2-83 to 2-108, and Life-Threatening Complications, pages 3-89 to 3-93 IMPAC, pages S-1 to S-5 and C-15 to C16</td>
<td>Homework: BMNC, Breastfeeding support, pages 4-47 to 4-52, and Postpartum Contraception, pages 4-54 to 4-59 Review BPMNC PowerPoint slides on Kangaroo Care, Module 17, slides 33 to 38</td>
<td>Homework: BMNC, Convulsions, etc., pages 3-93 to 3-95, and IMPAC pages S-35 to S-50</td>
<td>Homework: BMNC, Chapter 5, ANC, pages 2-5 to 2-36, and Chapter 9, Common Discomforts and Concerns, pages 3-1 to 3-24</td>
</tr>
<tr>
<td>1730</td>
<td>Trainer Meeting</td>
<td>Trainer Meeting</td>
<td>Adjourn</td>
<td>Trainer Meeting</td>
</tr>
<tr>
<td>1930</td>
<td>On-Call: Teams 7 and 8</td>
<td>On-Call: Teams 1 and 2</td>
<td>On-Call: Teams 3 and 4</td>
<td>On-Call: Teams 5 and 6</td>
</tr>
</tbody>
</table>
## Best Practices in Maternal and Newborn Care: 3-Week Workshop Schedule for Pre-Service Faculty/Tutors

<table>
<thead>
<tr>
<th>TIME</th>
<th>DAY 9 WEDNESDAY</th>
<th>DAY 10 THURSDAY</th>
<th>DAY 11 FRIDAY</th>
<th>DAY 12 SATURDAY</th>
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<tbody>
<tr>
<td>0630</td>
<td>Rounds: Teams 1 and 2</td>
<td>Rounds: Teams 3 and 4</td>
<td>Rounds: Teams 5 and 6</td>
<td>Rounds: Teams 7 and 8</td>
</tr>
<tr>
<td>0845</td>
<td><strong>Skills Practice</strong> for individual participants for individual skills in preparation for skills checklist</td>
<td><strong>Review Post-Test</strong></td>
<td><strong>Clinical</strong></td>
<td><strong>Clinical</strong></td>
</tr>
<tr>
<td>1000</td>
<td><strong>Break</strong></td>
<td><strong>Break</strong></td>
<td><strong>Break</strong></td>
<td><strong>Break</strong></td>
</tr>
</tbody>
</table>
| 1015  | Individual Participant **Skills Checkout**:  
- Infant Resuscitation  
- Manual Removal of Placenta  
- Internal/External Bimanual Compression  
- Active Management of Third Stage of Labor  
- MVA | Clinical or continued practice in simulated setting as needed | **Clinical** (cont.) | **Clinical** (cont.) |
<p>| 1200  | <strong>Lunch</strong> | <strong>Lunch</strong> | <strong>Lunch</strong> | <strong>Lunch (closing)</strong> |
| 1300  | Individual Participant <strong>Skills Checkout</strong> (cont.) | Clinical (cont.) | Clinical (cont.) | Clinical (cont.) |
| 1500  | <strong>Break</strong> | <strong>Break</strong> | <strong>Break</strong> | <strong>Break</strong> |
| 1515  | <strong>Illustrated Presentation/Discussion:</strong> Midwifery Education | Report: Teams 7 and 8 (continued, if necessary) | Report: (as needed) | Review week’s clinical experiences |
| 1630  | <strong>Post-Test</strong> | Review and wrap up | Review and wrap-up | |
| 1730  |  |  |  |  |
| 1930  | On-Call: Teams 7 and 8 | On-Call: As needed | On-Call: As needed |  |</p>
<table>
<thead>
<tr>
<th>TIME</th>
<th>DAY 13 MONDAY</th>
<th>DAY 14 TUESDAY</th>
<th>DAY 15 WEDNESDAY</th>
<th>DAY 16 THURSDAY</th>
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</thead>
<tbody>
<tr>
<td>0630</td>
<td>Rounds: Teams 1 and 2</td>
<td>Rounds: Teams 3 and 4</td>
<td>Rounds: Teams 5 and 6</td>
<td>Rounds: Teams 7 and 8</td>
</tr>
<tr>
<td>0845</td>
<td>Clinical</td>
<td>Clinical</td>
<td>Clinical</td>
<td>Clinical</td>
</tr>
<tr>
<td>1000</td>
<td>Break</td>
<td>Break</td>
<td>Break</td>
<td>Break</td>
</tr>
<tr>
<td>1015</td>
<td>Clinical (cont.)</td>
<td>Clinical (cont.)</td>
<td>Clinical (cont.)</td>
<td>Clinical (cont.)</td>
</tr>
<tr>
<td>1200</td>
<td>Lunch</td>
<td>Lunch</td>
<td>Lunch</td>
<td>Lunch (closing)</td>
</tr>
<tr>
<td>1300</td>
<td>Clinical (cont.)</td>
<td>Clinical continued</td>
<td>Clinical (cont.)</td>
<td>Clinical (cont.)</td>
</tr>
<tr>
<td>1500</td>
<td>Break</td>
<td>Break</td>
<td>Break</td>
<td>Break</td>
</tr>
<tr>
<td>1515</td>
<td>Clinical (cont.)</td>
<td>Clinical (cont.)</td>
<td>Clinical (cont.)</td>
<td>Clinical (cont.)</td>
</tr>
<tr>
<td>1630</td>
<td>Review and wrap-up</td>
<td>Review and wrap up</td>
<td>Review and wrap-up</td>
<td>Review and wrap-up</td>
</tr>
<tr>
<td>1730</td>
<td>On-Call: Teams 7 and 8</td>
<td>On-Call: As needed</td>
<td>On-Call: As needed</td>
<td>On-Call: As needed</td>
</tr>
<tr>
<td>1930</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TIME</td>
<td>DAY 17 FRIDAY</td>
<td>DAY 18 SATURDAY</td>
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</tr>
<tr>
<td>0630</td>
<td>Rounds: (as needed)</td>
<td>Rounds: (as needed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0800</td>
<td>Report: (as needed)</td>
<td>Report: (as needed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0845</td>
<td>Clinical</td>
<td>Clinical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td>Break</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1015</td>
<td>Clinical</td>
<td>Review clinical experiences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1200</td>
<td>Lunch</td>
<td>Lunch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1300</td>
<td>Clinical (cont.)</td>
<td>Meeting with trainers, participants and selected stakeholders to discuss the Pre-service Initiative accomplishments, challenges and future plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1500</td>
<td>Break</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1515</td>
<td>Post-Course Evaluations</td>
<td>Closing</td>
<td></td>
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<tr>
<td>1630</td>
<td>Review and wrap-up</td>
<td>Review and wrap-up</td>
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<tr>
<td>1730</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1930</td>
<td>On-Call: Teams 7 and 8</td>
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</tbody>
</table>

Notes:
- Time for clinical may be changed if there are clients in labor or if a clinic has specific hours of operation.
- Skill checkout can happen for participants at any point they feel ready.
- Experience in ANC and PP clinic must happen AFTER the classroom work on antenatal care and postpartum care, respectively.
- The lead trainer will be on-call with trainers and participants on alternate days from 7 PM until 10 PM. Trainers and participants will be on call throughout the training starting on Day 2 to take full advantage of clinical experiences. On-call assignments will be made on Day 1.
### MID-TRAINING EVALUATION FORM

<table>
<thead>
<tr>
<th>PLEASE EVALUATE THE FOLLOWING STATEMENTS:</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UN-DECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The class and clinical areas are satisfactory for my learning.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. The facilitators/teachers communicate clearly and simply.</td>
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<tr>
<td>3. The facilitator’s/teacher’s methods of teaching are satisfactory.</td>
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<tr>
<td>4. The topics covered are relevant to my work.</td>
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<tr>
<td>5. The facilitators/teachers and trainees are interacting well together.</td>
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<tr>
<td>6. The training is updating my knowledge and skills.</td>
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<tr>
<td>7. Teaching aids are useful.</td>
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</tr>
<tr>
<td>8. Practice in the clinical area is important and helpful.</td>
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</tbody>
</table>

Please answer the following questions. Use the back for more writing space if needed.

1. Is there anything discussed/taught in Week 1 that you do not understand? Please explain:

2. What are the skills in which you need the most support? Please explain:
# FINAL EVALUATION FORM

<table>
<thead>
<tr>
<th>PLEASE EVALUATE THE FOLLOWING STATEMENTS:</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UN-DECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. For the work I do, the training was appropriate.</td>
<td></td>
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<tr>
<td>2. Training facilities and arrangements were satisfactory.</td>
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</tr>
<tr>
<td>3. The facilitators/teachers were knowledgeable and skilled.</td>
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</tr>
<tr>
<td>4. The facilitators/teachers were fair and friendly.</td>
<td></td>
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</tr>
<tr>
<td>5. The training updated my knowledge and skills.</td>
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<td></td>
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</tr>
<tr>
<td>6. Training objectives were met.</td>
<td></td>
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</tr>
<tr>
<td>7. Teaching aids were useful.</td>
<td></td>
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</tr>
<tr>
<td>8. Practice in the clinical areas was important and helpful.</td>
<td></td>
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</tr>
</tbody>
</table>

Please answer the following questions. Use the back for more writing space if needed.

1. What was the most useful part of the training course for you?

2. What part of the training course was not useful to you?

3. What suggestions do you have to improve the training course?

4. Other comments:
**MODULE 1: APPROACH TO TRAINING—SESSION PLAN**

**MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE**

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Approach to Training</td>
<td>40 min</td>
</tr>
</tbody>
</table>

**SESSION OBJECTIVES**

*By the end of this session, participants will be able to describe:*

- Mastery learning
- Adult learning
- Competency-based training
- Humanistic training

<table>
<thead>
<tr>
<th>Methods and Activities</th>
<th>Materials/Resources</th>
</tr>
</thead>
</table>
| Small group work: How I learned to make bread (10 min) | • Boxlight projector  
• PowerPoint presentation  
OR  
• Overhead projector with transparencies (Handouts of presentations if no electricity) |
| Divided into groups of two.  
Discuss the steps in learning to make bread. | |
| Illustrated presentation/discussion with case study: Approach to training (30 min) | |
| Have two or three participants describe steps in learning to make bread. | |
| Use bread-making example throughout presentation. | |
| Intersperse presentation with questions, examples and discussion. | |
| Be sure to cover all of the following topical areas: | |
| o Mastery learning | |
| o Stages of learning | |
| ▪ Skill acquisition | |
| ▪ Skill competency | |
| ▪ Skill proficiency | |
| o Behavior modeling | |
| o Competency-based training | |
| o Coaching | |
| o Humanistic training techniques | |
| o Preparation for clinical performance | |
| • Summarize key points. | |
KNOWLEDGE ASSESSMENT: APPROACH TO TRAINING

**Instructions:** Write the letter of the single **best** answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Adult learning principles include:
   a. Learning is participatory, relevant and practical
   b. Builds on what the learner already knows or has experienced
   c. Learners retain knowledge best when punished for incorrect behavior
   d. a) and b)
   e. a) and c)
   f. All of the above

2. Behavior modeling focuses on:
   a. Learning by doing
   b. Specific knowledge, attitudes and skills needed to carry out the procedure or activity
   c. How the learner performs rather than just the information learned
   d. All of the above
   e. None of the above

3. Humanistic teaching stresses
   a. Use of anatomic models and simulated learning situations
   b. Initially working with models rather than with patients allows learners to learn and practice new skills in a simulated setting
   c. Always treating a patient
   d. All of the above

**Instructions:** In the space provided, print a capital **T** if the statement is **true** or a capital **F** if the statement is **false**.

4. Mastery learning assumes that all learners can learn the required knowledge, attitudes or skills provided sufficient time is allowed and appropriate learning methods are used

5. Coaching occurs after knowledge mastery and before a demonstration of clinical practice.

6. Competency-based training emphasizes how the learner performs rather than just the information learned
Session Objectives

- By the end of the session, the participant will be able to describe:
  - Mastery learning:
    - Acquisition
    - Competency
    - Proficiency
  - Adult learning
  - Competency-based training
  - Humanistic training

How did you learn to make bread?

- Discuss in pairs of two
- Following two-by-two discussion, have several people describe to the larger group how they learned to bake bread
- Label as types of learning/teaching and use as reference examples throughout rest of session

Mastery Learning

- Assumes that all learners can master (learn) the required knowledge, attitudes or skills provided sufficient time is allowed and appropriate learning methods are used
- Goal: 100 percent of the learners will “master” the knowledge and skills on which the learning is based
Mastery Learning (cont.)

Takes differences into account:
- Some learners are able to acquire new knowledge or new skills immediately
- Others require additional time or alternative learning methods
- Individuals learn best in different ways—through written, spoken or visual means
- Use a variety of teaching methods

Mastery Learning (cont.)

- Based on principles of adult learning:
  - Learning is participatory, relevant and practical
  - Builds on what the learner already knows or has experienced
  - Provides opportunities for practicing skills
- Uses behavior modeling
- Is competency-based
- Incorporates humanistic learning techniques

Stages of Learning

- Skills learning usually takes place in three stages:
  - Skill acquisition. The learner sees others perform the skill and acquires a mental picture of the required steps. The learner then attempts to perform the procedure, usually with supervision.
  - Skill competency. Next, the learner practices until skill competency is achieved, and s/he feels confident performing the procedure.
  - Skill proficiency occurs with repeated practice over time.
The learner can bake bread without referring to the recipe and does not need coaching. Learner effectively performs the skill of baking bread.

### Skill Competency

The learner can bake bread and needs to refer to the recipe only occasionally, and needs minimal coaching from a colleague. Learner can perform the required skill, although hesitantly.

### Skill Proficiency

The learner can bake bread without referring to the recipe and does not need coaching. Learner needs assistance.

---

**Behavior Modeling**

- When conditions are ideal, a person learns most rapidly and effectively from watching someone perform (model) a skill or activity.
- Trainer must clearly demonstrate the skill or activity so that learners have a clear picture of the performance expected of them.

**Question??**

- How is competency-based training different from any other training?
- Which type of training do you most commonly see used?
Competency-Based Training

- Learning by doing
- Focuses on the specific knowledge, attitudes and skills needed to carry out the procedure or activity
- How the learner performs (i.e., a combination of knowledge, attitudes and, most important, skills) is emphasized rather than just the information learned
- Competency in the new skill or activity is assessed objectively by evaluating overall performance

Competency-Based Training (cont.)

- Break down the skill or activity into essential steps
- Analyze each step to determine the most efficient and safe way to perform and learn it (standardization)
- Once a procedure has been standardized, develop competency-based learning guides and evaluation checklists to make learning the necessary steps or tasks easier and evaluating the learner’s performance more objective

Coaching

- An essential component of CBT
- First explain a skill or activity, then demonstrate it using an anatomic model or other training aid, such as a video
- Once the procedure has been demonstrated and discussed, observe the learners and guide them in learning the skill or activity, monitoring their progress and helping them overcome problems

Coaching (cont.)

Coaching ensures that the learner receives feedback regarding performance:

- Before practice — Teacher and learners meet briefly before each practice session to review the skill, activity, and/or tasks
- During practice — Teacher observes, coaches and provides feedback to the learner as s/he performs the steps/tasks outlined in the learning guide
- After practice — Immediately after practice, the learning guide is used to discuss the learner’s performance, including strengths and specific suggestions for improvement
What is “Humanistic Training”?  

**Humanistic Training Techniques**

- Use of anatomic models (and other learning aids) which closely simulate the human body
- Initially working with models rather than with patients allows learners to learn and practice new skills in a simulated setting:
  - Reduces stress for the learner
  - Reduces risk of injury and discomfort to the patient
- Always treat patient/client with utmost respect:
  - Put the patient’s/client’s well-being first
  - Respect dignity, modesty, socio-cultural background

**Preparation for Clinical Performance**

Before performing a clinical procedure with a patient:
- The clinical teacher should demonstrate the skills and patient interactions several times using an anatomic model, role plays or other simulations
- Under the guidance of the teacher, the learner should practice the required skills and patient interactions using the model, role plays or other simulations and actual instruments in a setting that is as similar as possible to the real situation

**How do you decide when a student is ready to begin working in a clinical situation (Clinical Practicum)?**
Skill Competency

- Only when skill competency has been demonstrated should learners have their first contact with a patient
- May be challenging in a pre-service education setting due to large numbers of learners
- Before any learner provides services to a patient, however, it is important that the learner demonstrate skill competency using models, role plays or simulations, especially for core skills

Summary

- When mastery learning, based on adult learning principles and behavior modeling, is integrated with CBT, the result is a powerful and extremely effective method for providing clinical training
- When humanistic training techniques are incorporated, training time and costs can be significantly reduced

References

# SESSION PLAN

## MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maternal and Neonatal Mortality Reduction</td>
<td>45 min</td>
</tr>
</tbody>
</table>

**SESSION OBJECTIVES**

*By the end of this session, participants will be able to describe:*
- Magnitude of maternal and neonatal mortality
- Causes of maternal and neonatal mortality
- Historical and current interventions to reduce maternal and neonatal mortality

<table>
<thead>
<tr>
<th>Methods and Activities</th>
<th>Materials/Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illustrated presentation/discussion with case study: Every pregnancy</td>
<td>Boxlight projector</td>
</tr>
<tr>
<td>is at risk (45 min)</td>
<td>PowerPoint presentation</td>
</tr>
<tr>
<td>• Presentation:</td>
<td>OR</td>
</tr>
<tr>
<td>o Global scope of maternal mortality</td>
<td>Overhead projector with transparencies (Handouts of</td>
</tr>
<tr>
<td>o Global scope of newborn mortality</td>
<td>presentations if no electricity)</td>
</tr>
<tr>
<td>o Global causes of maternal mortality</td>
<td></td>
</tr>
<tr>
<td>o Global causes of newborn mortality</td>
<td></td>
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<tr>
<td>o Pathway to survival</td>
<td></td>
</tr>
<tr>
<td>o Ineffective approaches to reduce maternal mortality</td>
<td></td>
</tr>
<tr>
<td>o Importance of skilled attendance to mortality reduction</td>
<td></td>
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<tr>
<td>• Intersperse presentation with questions, examples and discussion.</td>
<td></td>
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<tr>
<td>• Summarize key points.</td>
<td></td>
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</tbody>
</table>
KNOWLEDGE ASSESSMENT:
MATERNAL AND NEWBORN MORTALITY REDUCTION

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. The number of maternal deaths globally each year is closest to:
   a. One-quarter million
   b. 600,000
   c. 2 million

2. The two largest causes of maternal mortality globally are:
   a. Sepsis and postpartum hemorrhage
   b. Hemorrhage and hypertensive disease
   c. Postpartum hemorrhage and obstructed labor

3. Every year, the number of newborns who die during the first month of life is approximately:
   a. 600,000
   b. 2 million
   c. 4 million

4. Interventions that have proven most successful in reducing maternal mortality include:
   a. Use of risk approach to determine which women need specialized care
   b. The use of a skilled birth attendant who has access to emergency care
   c. Providing universal antenatal care

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

5. The three main causes of neonatal mortality globally are asphyxia, prematurity and infection.

6. Maternal mortality began to drop in the United Kingdom and in Sri Lanka when antenatal care was introduced.
“Every Pregnancy is at Risk”: Current Approach to Reduction of Maternal and Neonatal Mortality

Best Practices in Maternal and Newborn Care

Session Objectives

- To review:
  - Magnitude of maternal and neonatal mortality
  - Causes of maternal and neonatal mortality
  - Interventions to reduce maternal and neonatal mortality:
    - Traditional birth attendant
    - Antenatal care
    - Risk screening
    - Skilled attendant at childbirth
    - Postnatal care

What is Safe Motherhood?

“A woman’s ability to have a SAFE and healthy pregnancy and childbirth.”

Maternal Mortality: A Global Tragedy

- Annually, 529,000 women die of pregnancy related complications:
  - 99% in developing world
  - ~ 1% in developed countries
Maternal Health: Scope of Problem

- 180–200 million pregnancies per year
- 75 million unwanted pregnancies
- 50 million induced abortions:
  - 20 million unsafe abortions
- 30 million spontaneous abortions
- Approximately 600,000 maternal deaths (1 per minute)
- 1 maternal death = 30 maternal morbidities

Ask the group: What are the major causes of maternal mortality?

Other direct causes include embolism, ectopic pregnancy, anesthesia-related. Indirect causes include: malaria, heart disease. Adapted from: WHO analysis of causes of maternal deaths: A systematic review. The Lancet, vol 367, April 1, 2006.

Causes of Maternal Mortality

- Hemorrhage 31%
- Hypertensive Disorder 15%
- Sepsis 11%
- Anemia 8%
- Other direct causes 5%
- Indirect 14%
- HIV 3%
- Obstructed Labor 7%
- Unclassified 6%
- Unsafe Abortion 5%

Neonatal Health: Scope of Problem

Every year:

- 4 million neonatal deaths (first month of life):
  - Of those who die in the first month, 2/3 die in the 1st week
  - Of those who die in the first week, 2/3 die in the first 24 hours
- Eight neonatal deaths every minute
- 4 million stillbirths
Ask the group: What are major causes of neonatal mortality?

But why do these women and newborns die?

Modified Pathway to Survival

- Recognize Problem
- Get First Aid Care
- Decide to Seek Care
- Seek Care
- Get Quality EOC Care
- Referral Site
- Home & Community
- Survival

Causes of Newborn Death

- Sepsis/pneumonia 27%
- Tetanus 7%
- Other 3%
- Infection 30%
- Congenital 14%
- Asphyxia 7%
- Sepsis 11%
- Preterm 28%
- Diarrhoea 3%
- Other 3%

Maternal and Newborn Health Services

- Good quality maternal and newborn health services are not universally available and accessible:
  - > 35% receive no antenatal care
  - ~ 50% of deliveries not attended by skilled provider
  - ~ 70% receive no postpartum care during the first 6 weeks after delivery
Ask the group: What are some interventions that have not proved successful in reducing mortality?

Interventions to Reduce Maternal and Newborn Mortality

Historical review:
- Traditional birth attendants
- Antenatal care
- Risk screening

Current approach:
- Skilled attendant at delivery

Historical Review of Interventions

The flawed assumption:
Most life-threatening obstetric and newborn complications can be predicted or prevented.

The Crucial Facts

- EVERY woman and newborn faces risk
- Providers and the facility must be prepared to address emergencies at all times
- When problems are managed in a timely manner, many lives are saved
Interventions: Traditional Birth Attendants

**Advantages:**
- Community-based
- Sought out by women
- Low-tech
- Teaches clean delivery
- Can provide obstetric first aid at home
- Can provide and teach families preventive care and obstetric first aid

**Disadvantages:**
- Limited access to emergency drugs and other resources
- Distance from referral facility may delay emergency treatment
- Knowledge, skills and training not standardized

Conclusion

TBAs are useful in the maternal health network, but there will not be a substantial reduction in maternal mortality by TBAs delivering clinical services alone. There needs to be a household-to-hospital continuum of care to have the greatest impact.

Interventions: Antenatal Care

- Antenatal care clinics started in US, Australia, Scotland between 1910–1915
- New concept: screening healthy women for signs of disease
- By 1930s, large number (1,200) of ANC clinics opened in UK
- No reduction in maternal mortality

Interventions in ANC (cont.)

- However, ANC was widely used as a maternal mortality reduction strategy in 1980’s and early 1990s
- Is ANC important? YES!!
- Focused, individualized care leads to early detection of problems and birth preparation
Interventions: Risk Screening

Disadvantages:
- Very poorly predictive
- Wastes valuable client-provider time
- If risk-negative, gives false security
- Conclusion: Cannot identify those at risk of maternal mortality

Every Pregnancy Is at Risk

Interventions: Skilled Attendant at Childbirth

- Proper training, range of skills
- Anticipate possible problems
- Recognize onset of complications
- Observe woman, monitor fetus/infant
- Perform essential basic interventions
- Refer mother/baby to higher level of care if complications arise requiring interventions outside realm of competence

Maternal Mortality Reduction
Sri Lanka 1940–1985

Health system improvements:
- Introduction of system of health facilities
- Expansion of midwifery skills
- Decreased use of home delivery and delivery by untrained birth attendants
- Spread of family planning

85% births attended by trained personnel

Maternal Deaths per 100,000 livebirths

Best Practices in Maternal and Newborn Care
Learning Resource Package
The Higher the Proportion of Deliveries Attended by Skilled Provider, the Lower the Country’s Maternal Mortality Ratio

Summary

- Skilled attendant at childbirth is an effective intervention
- The household-to-hospital continuum of care has been shown to be more effective than facility-based care alone.


References

ACCESS Program. 2006. Home and Community-Based Health Care for Mothers and Newborns. (Technical guide.) ACCESS Program: Baltimore, MD.


MODULE 3: EVIDENCE-BASED MEDICINE—SESSION PLAN

MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Evidence-Based Medicine (EBM)</td>
<td>60 min</td>
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</table>

SESSION OBJECTIVES

By the end of this session, participants will be able to:

- Provide a definition of evidence-based medicine
- Provide introduction of levels of evidence based on research methods and study design
- Present examples of EBM in RH practice

Methods and Activities

Illustrated lecture/discussion: Evidence-based medicine in midwifery (20 min)
- Ask questions of the larger group throughout the session to elicit their experiences as midwifery educators.
- Intersperse presentation with questions, examples and discussion.
- Be sure to include all of the following in the session/discussion:
  - Definition of evidence-based medicine:
  - Sources of evidence:
    - General
    - Specific tools: from WHO, from other UN agencies, national guidelines
  - Levels of evidence
  - Illustrative relative risk and odds ratio
  - Challenges in providing evidence-based care
  - WHO resources

Small group discussion: Exercises in evidence-based practice (40 min)
- Use four practices from slide [1]: Use of the partograph for the management of labor; 2) Labor support and position in labor; 3) Routine vs. restricted use of episiotomy; 4) Active management of the 3rd stage of labor for four different groups to discuss. Discussion should be guided by focused questions on slide: What is the current practice in your country/institution? What is the rationale for current practice? Do you think current practice is evidence-based? Are all practitioners trained and competent in these skills?
- Have report and discussion from each group.
- Summarize results from group discussion.

Materials/Resources

- Boxlight projector
- PowerPoint presentation
- Overhead projector with transparencies (Handouts of presentations if no electricity)
- Flip charts
- Markers
- Note paper from groups to record responses
KNOWLEDGE ASSESSMENT: EVIDENCE-BASED MEDICINE

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. The use of a partograph for decision-making during labor has become accepted as an evidence-based practice because:
   a. Midwives and physicians have been using it since the 1980s
   b. A randomized, multi-center trial conducted by WHO showed significant numerous positive benefits from its use
   c. Women-friendly care supports reduced frequency of vaginal exams during labor
   d. a) and b)
   e. a) and c)
   f. All of the above

2. Mechanisms for ensuring the practice of evidence-based medicine include:
   a. Keeping abreast with the evidence
   b. Setting and implementing standard protocols
   c. Audit and peer review
   d. Evaluating outcomes
   e. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

3. Evidence-based medicine is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. _____

4. Support from a female relative improves labor outcomes. _____

5. Although only one study has been conducted to determine the efficacy of active management of the third stage of labor (AMSTL), the study was well-designed and showed significant reduction in postpartum hemorrhage when AMSTL was used. _____
Evidence-Based Medicine in Maternal and Newborn Health

Best Practices in Maternal and Newborn Care

Objectives of EBM Session

- Provide a definition of evidence-based medicine
- Provide introduction of levels of evidence based on research methods and study design
- Present examples of EBM in RH practice

What is evidence-based medicine?

Definition: Evidence-based medicine is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.

Source: Oxford Centre for Evidence-Based Medicine.
Where do we obtain evidence to be used in our midwifery education and practice?

- Ideally, all clinicians would know the best methods for the care of each medical condition or situation.
- In reality, this is not the case, so we must rely on evidence gathered by the scientific community to guide our clinical decision-making.
- All evidence is not equally reliable so we must be able to tell the difference.

Where do we find tools for translating research into practice?

- WHO – Examples:
  - IMPAC series – MCPC, MNP, ECPG
  - Medical Eligibility Criteria for Contraceptive Use
  - Standards, e.g., PMTCT of syphilis
- Other UN agencies
- National guidelines and protocols

All evidence is not created equal.
### Levels of Evidence

<table>
<thead>
<tr>
<th>A</th>
<th>1a</th>
<th>Systematic review of randomized controlled trials</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1b</td>
<td>Individual randomized controlled trials</td>
</tr>
<tr>
<td>B</td>
<td>2a</td>
<td>Systematic review of cohort studies</td>
</tr>
<tr>
<td></td>
<td>2b</td>
<td>Individual cohort studies</td>
</tr>
<tr>
<td></td>
<td>3a</td>
<td>Systematic review of case-control studies</td>
</tr>
<tr>
<td></td>
<td>3b</td>
<td>Individual case-control studies</td>
</tr>
<tr>
<td>C</td>
<td>4</td>
<td>Case studies</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
<td>Expert opinion without explicit critical appraisal</td>
</tr>
</tbody>
</table>

### Relative Risk/Odds Ratio

- **Protective Effect**
- **Deleterious Effect**

<table>
<thead>
<tr>
<th>Relative Risk (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>10</td>
</tr>
</tbody>
</table>

### Routine Intrapartum Fetal Monitoring

- Detection of fetal cardiac abnormalities
- Apgar
- Signs of neurological abnormalities
- Perinatal interventions
- Perinatal Mortality

<table>
<thead>
<tr>
<th>4 studies 1579 patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative Risk (95% CI)</td>
</tr>
<tr>
<td>0.05</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>20</td>
</tr>
</tbody>
</table>
Small Group Exercise

- Each group is assigned one of the following EBM practices for discussion:
  1. Use of the partograph for the management of labor
  2. Labor support and position in labor
  3. Routine vs. restricted use of episiotomy
  4. Active management of the 3rd stage of labor

- Questions for Discussion:
  1. What is the current practice in your country/institution?
  2. What is the rationale for current practice
  3. Do you think current practice is evidence-based?
  4. Are all practitioners trained and competent in these skills?

Partograph and Criteria for Active Labor

- Label with patient identifying information
- Note fetal heart rate, color of amniotic fluid, presence of moulding, contraction pattern, medications given
- Plot cervical dilation
- Alert line starts at 4 cm; from here, expect to dilate at rate of 1 cm/hour
- Action line: If patient does not progress as above, action is required

WHO Partograph Trial

- Objectives:
  - To evaluate impact of WHO partograph on labor management and outcome
  - To devise and test protocol for labor management with partograph
- Design: Multicenter trial randomizing hospitals in Indonesia, Malaysia and Thailand
- No intervention in latent phase until after 8 hours
- At active phase action line consider: Oxytocin augmentation, cesarean section, or observation AND supportive treatment

WHO Partograph: Results of Study

<table>
<thead>
<tr>
<th>Mode of delivery</th>
<th>Before Implementation</th>
<th>After Implementation</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total deliveries</td>
<td>18254</td>
<td>17230</td>
<td></td>
</tr>
<tr>
<td>Labor &gt; 18 hours</td>
<td>6.4%</td>
<td>3.4%</td>
<td>0.002</td>
</tr>
<tr>
<td>Labor augmented</td>
<td>20.7%</td>
<td>9.1%</td>
<td>0.023</td>
</tr>
<tr>
<td>Postpartum sepsis</td>
<td>0.70%</td>
<td>0.21%</td>
<td>0.028</td>
</tr>
<tr>
<td>Normal Women</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mode of delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spontaneous cephalic</td>
<td>8428 (83.9%)</td>
<td>7869 (96.3%)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Forceps</td>
<td>341 (3.4%)</td>
<td>227 (2.5%)</td>
<td>0.005</td>
</tr>
</tbody>
</table>

Position in Labor and Childbirth

- Allow freedom in position and movement throughout labor and childbirth
- Encourage any non-supine position:
  - Side lying
  - Squatting
  - Hands and knees
  - Semi-sitting
  - Sitting

Position in Labor and Childbirth (cont.)

Use of upright or lateral position compared with supine or lithotomy position is associated with:

- Shorter second stage of labor (5.4 minutes, 95% CI 3.9–6.9)
- Fewer assisted deliveries (OR 0.82, CI 0.69–0.98)
- Fewer episiotomies (OR 0.73, CI 0.64–0.84)
- Fewer reports of severe pain (OR 0.59, CI 0.41–0.83)
- Less abnormal heart rate patterns for fetus (OR 0.31, CI 0.11–0.91)
- More perineal tears (OR 1.30, CI 1.09–1.54)
- Blood loss > 500 mL (OR 1.76, CI 1.34–3.32)

Source: Gupta and Nisodem 2000.

Support of the Woman

- Give woman as much information and explanation as she desires
- Provide care in labor and childbirth at a level where woman feels safe and confident
- Provide empathetic support during labor and childbirth
- Facilitate good communication among caregivers, the woman and her companions
- Continuous empathetic and physical support is associated with shorter labor, less medication and epidural analgesia, and fewer operative deliveries


Presence of Female Relative during Labor: Results

Randomized controlled trial in Botswana: 53 women with relative; 56 without

<table>
<thead>
<tr>
<th>Labor Outcome</th>
<th>Experimental Group (%)</th>
<th>Control Group (%)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous vaginal delivery</td>
<td>91</td>
<td>71</td>
<td>0.03</td>
</tr>
<tr>
<td>Vacuum delivery</td>
<td>4</td>
<td>16</td>
<td>0.03</td>
</tr>
<tr>
<td>Cesarean section</td>
<td>6</td>
<td>13</td>
<td>0.03</td>
</tr>
<tr>
<td>Analgesia</td>
<td>53</td>
<td>73</td>
<td>0.03</td>
</tr>
<tr>
<td>Amniotomy</td>
<td>30</td>
<td>54</td>
<td>0.01</td>
</tr>
<tr>
<td>Oxytocin</td>
<td>13</td>
<td>30</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Source: Madi et al. 1999.
Presence of Female Relative during Labor: Conclusion

Support from female relative improves labor outcomes

Madi et al. 1999.

Restricted Use of Episiotomy: Objectives and Design

- Objective: To evaluate possible benefits, risks and costs of restricted use of episiotomy vs. routine episiotomy
- Design: Meta-analysis of six randomized control trials

Carroli and Belizan 2000.

Restricted Use of Episiotomy: Maternal Outcomes Assessed

- Severe vaginal/perineal trauma
- Need for suturing
- Posterior/anterior perineal trauma
- Perineal pain
- Dyspareunia
- Urinary incontinence
- Healing complications
- Perineal infection

Source: Carroli and Belizan 2000.

Restricted Use of Episiotomy: Results of Cochrane Review

<table>
<thead>
<tr>
<th>Clinically Relevant Morbidities</th>
<th>Relative Risk</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posterior perineal trauma</td>
<td>0.88</td>
<td>0.84–0.92</td>
</tr>
<tr>
<td>Need for suturing</td>
<td>0.74</td>
<td>0.71–0.77</td>
</tr>
<tr>
<td>Healing complications at 7 days</td>
<td>0.69</td>
<td>0.56–0.85</td>
</tr>
<tr>
<td>Anterior perineal trauma</td>
<td>1.79</td>
<td>1.55–2.07</td>
</tr>
</tbody>
</table>

- No increase in incidence of major outcomes (e.g., severe vaginal or perineal trauma nor in pain, dyspareunia or urinary incontinence)
- Incidence of 3rd degree tear reduced (1.2% with episiotomy, 0.4% without)
- No controlled trials on controlled delivery or guarding the perineum to prevent trauma

Outcome of Routine Episiotomy vs. Restricted Use: A Systematic Review

- No benefit in terms of perineal lacerations, pain or pain medication use
- No benefit in preventing urinary or fecal incontinence
- No benefit in preventing pelvic relaxation
- Painful intercourse more common in women who have had an episiotomy


Indicated Use of Episiotomy: Reviewer’s Conclusions

- Implications for practice: Clear evidence to restrict use of episiotomy in normal labor
- Implications for research: Further trials needed to assess use of episiotomy at:
  - Assisted delivery (forceps or vacuum)
  - Preterm delivery
  - Breech delivery
  - Predicted macrosomia
  - Presumed imminent tears (threatened 3rd degree tear or history of 3rd degree tear with previous delivery)


Best Practices: Third Stage of Labor

- Active management of third stage for ALL women:
  - Oxytocin administration
  - Controlled cord traction
  - Uterine massage after delivery of the placenta to keep the uterus contracted
- Routine examination of the placenta and membranes
  - 22% of maternal deaths caused by retained placenta
- Routine examination of vagina and perineum for lacerations and injury

WHO 2000.

Risk of Postpartum Hemorrhage

<table>
<thead>
<tr>
<th>Management of Third Stage of Labor</th>
<th>Blood Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiologic*</td>
<td>18.0%</td>
</tr>
<tr>
<td>Active (oxytocin)**</td>
<td>2.7%</td>
</tr>
<tr>
<td>Misoprostol**</td>
<td>3.6%</td>
</tr>
</tbody>
</table>

Sources:
**Villar et al. 2000.
Evidence for Active Management of the 3rd Stage of Labor

<table>
<thead>
<tr>
<th>Duration 3rd stage (median)</th>
<th>Active Management</th>
<th>Physiologic Management</th>
<th>OR and 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bristol</td>
<td>5 minutes</td>
<td>15 minutes</td>
<td>Not done</td>
</tr>
<tr>
<td>Hinchingbrooke</td>
<td>8 minutes</td>
<td>15 minutes</td>
<td>Not done</td>
</tr>
<tr>
<td>Third stage &gt; 30 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bristol</td>
<td>25 (2.9%)</td>
<td>221 (26%)</td>
<td>6.42 (4.9-8.41)</td>
</tr>
<tr>
<td>Hinchingbrooke</td>
<td>25 (3.3%)</td>
<td>125 (16.4%)</td>
<td>4.9 (3.22-7.43)</td>
</tr>
<tr>
<td>Blood transfusion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bristol</td>
<td>18 (2.1%)</td>
<td>48 (5.6%)</td>
<td>2.56 (1.57-4.19)</td>
</tr>
<tr>
<td>Hinchingbrooke</td>
<td>4 (0.5%)</td>
<td>20 (2.6%)</td>
<td>4.9 (1.68-14.25)</td>
</tr>
<tr>
<td>Therapeutic oxytocics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bristol</td>
<td>84 (6.4%)</td>
<td>252 (29.7%)</td>
<td>4.83 (3.77-6.18)</td>
</tr>
<tr>
<td>Hinchingbrooke</td>
<td>24 (3.2%)</td>
<td>161 (21.1%)</td>
<td>6.25 (4.33-9.96)</td>
</tr>
</tbody>
</table>

Challenges in Providing Evidence-Based Reproductive Health Care

- Keeping abreast with the evidence
- Setting and implementing standard protocols
- Audit and peer review
- Evaluating outcomes

Accessing WHO

- [http://www.who.int](http://www.who.int)
  - Health topics
  - Publications
  - Search

References


# MODULE 4: WOMEN-FRIENDLY CARE—SESSION PLAN

## MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Discussion: Women-Friendly Care</td>
<td>45 min</td>
</tr>
</tbody>
</table>

### SESSION OBJECTIVES

*By the end of this session, participants will be able to:*

- Describe women-friendly care
- Discuss the importance of women-friendly care
- Describe strategies to ensure women-friendly care is practiced

### Methods and Activities

**Small group discussion: Women-friendly care (25 min)**

- Divide participants into groups of three to five participants to discuss questions provided in PowerPoint slides:
  - How would you define "women-friendly care"?
  - Why is women-friendly care important?
  - Give some examples of care you have seen that is not women-friendly.
  - Give some examples of care that is women-friendly.
  - How can you help ensure that your students will value and learn to provide women-friendly care?
- Discuss answers from groups.

**Summarize and review with presentation. (20 min)**

- Elicit examples from group during presentation.

### Materials/Resources

- Boxlight projector
- PowerPoint presentation
- Overhead projector with transparencies (Handouts of presentations if no electricity)
- Flip charts
- Markers
- Note paper from groups to record responses

Knowledge assessment may not be appropriate since this is a discussion. However, assessment tool is provided.
KNOWLEDGE ASSESSMENT: WOMEN-FRIENDLY CARE

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Women-friendly care means that:
   a. Women have access to hospitals and doctors for primary care
   b. Protects women from information about themselves or their care when danger signs, or dangerous conditions, appear
   c. Empower women to become active participants in their care
   d. a) and b)
   e. a) and c)
   f. All of the above

2. Some examples of women-friendly care include:
   a. Speaking to the woman in her own language
   b. Individualizing care to women’s needs
   c. Respecting cultural norms
   d. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

3. Students will learn to value and provide women-friendly care if you provide consistent rebuke and punishment for not being friendly. _____

4. Women-friendly care is life-saving, as studies have shown that women may refuse to seek care from a provider who “abuses” them or does not treat them well, even if the provider is skilled in preventing and managing complications. _____

Module 4: Women-Friendly Care - 2

Best Practices in Maternal and Newborn Care

Learning Resource Package
Women-Friendly Care: A Discussion

Best Practices in Maternal and Newborn Care

Divide into Groups of 3–5 Participants

Discuss the following questions:
- How would you define “women-friendly care”?
- Why is women-friendly care important?
- Give some examples of care you have seen that is not women-friendly.
- Give some examples of care that is women-friendly.
- How can you help ensure that your students will value and learn to provide women-friendly care?

After Small Group Discussion . . .

. . . Reconvene as a large group to share your thoughts, conclusions and recommendations . . .

Discussion Guide for Facilitator

- The next slides will have some points you will want to bring out during the discussion.
- Be sure to allow, and build on, participant contributions as much as possible in summarizing the discussions.
How would you define “women-friendly care”? 

- Provides services that are acceptable to the woman:
  - Respects beliefs, traditions, and culture
  - Includes family, partner, or other support person in care
  - Provides relevant and feasible advice
- Empowers woman and her family to become active participants in care
- Considers the rights of the woman:
  - Right to information about her health
  - Right to be informed about what to expect during visit
  - Obtains permission/consent prior to exams and procedures
- Ensures that all health care staff use good interpersonal skills
- Considers the emotional, psychological and social well-being of the woman

Why is women-friendly care important? 

Women-friendly care is life-saving, as studies have shown that women may refuse to seek care from a provider who “abuses” them or does not treat them well, even if the provider is skilled in preventing and managing of complications.

Give some examples of care that is not women-friendly 

- Does not respect woman or her culture or background
- Rude, offensive, demeaning language by health personnel
- Physically restrains, pushes or hits the woman
- Insists on routine procedures that are convenient for the health care provider but may be shameful or disgusting to the woman, e.g., lithotomy position only, routine episiotomy, frequent vaginal exams, assembly-line fashion of care
- Excludes partner or companion from care
- Separates mother and baby

Give some examples of care that is women-friendly 

- Individualizes care to woman’s needs
- Recognizes the richness and spiritual significance of community and culture:
  - Is aware of traditional beliefs regarding pregnancy and childbirth
  - Cooperates and liaises with traditional health care system when possible
  - Provides culturally sensitive care
- Respects and supports the mother-baby dyad:
  - Encourages bonding
  - Keeps baby with mother
  - Places baby on mother's abdomen (at breast) immediately after birth
### Give some examples of care that is women-friendly (cont.)

- Speaks to the woman in her own language
- Observes rules and norms of her culture as appropriate
- Is aware of who makes decisions in her life and involves that person in discussions and decisions
- Works with traditional birth attendants when possible
- Learns about traditional practices:
  - Promotes/builds on positive traditional practices
  - Offers alternatives to those that are harmful

### How can you help ensure that your students will value and learn to provide women-friendly care?

- Consistent role modeling of women-friendly care
- Use of women-friendly approaches in simulated settings, e.g., with anatomic models
- Emphasis of women-friendly care during teaching of all procedures and types of care
## Module 5: Clinical Decision-Making—Session Plan

<table>
<thead>
<tr>
<th>Session</th>
<th>Topic</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Decision-Making</td>
<td>45 min</td>
<td></td>
</tr>
</tbody>
</table>

### Session Objectives

**By the end of this session, participants will be able to:**

- Describe steps in clinical decision-making
- Apply clinical decision-making steps to real-life clinical situations

### Methods and Activities

<table>
<thead>
<tr>
<th>Group work: Case study from non-clinical situation (10 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divide participants into groups of two to five to discuss CDM Case Study 5.1.</td>
</tr>
<tr>
<td>Following small group work, reassemble to discuss case study.</td>
</tr>
</tbody>
</table>

### Illustrated presentation/discussion: Clinical decision-making (20 min)

- Use Case Study 5.2 to "walk" the group through each step of the clinical decision-making process.
- Discuss issues that arise during presentation and questioning.
- Use PowerPoint slides to summarize steps.
- Be sure to cover all of the following:
  - Define clinical decision-making.
  - Provide examples of clinical decision-making tools.
  - Describe advantages/usefulness of clinical decision-making.
  - Describe each step in clinical decision-making:
    - Gather information.
    - Interpret information.
    - Develop care plan.
    - Implement care plan.
    - Evaluate results of implementation of care plan.
    - Continue or revise care.

### Group Work: Case study from their own experience (15 min)

- Return to small groups.
- Each group is to choose one situation in clinic or ward from their own experience while caring for a woman. Then divide their decision-making process into steps.
- Record steps on flip chart.
- Reassemble and select two groups to report to larger group.

### Materials/Resources

- Boxlight projector
- PowerPoint presentation
- Overhead projector with transparencies (Handouts of presentations if no electricity)
- Flip charts
- Markers
CASE STUDY EXERCISE: CLINICAL DECISION-MAKING

CASE STUDY 5.1: HOW DO WE SOLVE PROBLEMS IN EVERYDAY LIFE?

Purpose
This case study is to help you learn the decision-making steps by thinking about an example in everyday life.

Directions
Put the story sentence number that shows what decision-making step Sam’s mother is taking into the decision-making chart that follows.

The Story of Sam

Four-year-old Sam runs into the house. He is crying and holding his head. Sam’s mother asks: “What happened to you?”

- Sam answers: “Some big boys dropped a rock on my head from up in the tree.”
- The mother looks at her child’s head, examines the wound, and feels around his skull.
- She sees that he has a small, shallow cut, but the rest of his head is not injured. There is no swelling or bleeding.
- The mother decides that Sam is not bleeding and does not have a serious injury.
- The mother washes the cut and covers it.
- She tells Sam to rest and stay away from the bigger boys.

Step 6 of the Decision-Making Steps starts the decision-making steps again. What decision-making steps is Sam’s mother taking in the sentences below?

- The next day she asks Sam, “Does your head still hurt?” He says, “No, I feel fine.”
- She also looks at the wound to see if it is healing.
- She sees that the wound is not swollen and there is no drainage or redness.
- She decides that the wound is healing and that Sam is well.
<table>
<thead>
<tr>
<th>DECISION-MAKING STEPS</th>
<th>PUT THE STORY SENTENCE NUMBER THAT SHOWS WHAT PROBLEM-SOLVING STEP SAM’S MOTHER IS TAKING INTO THE PROBLEM-SOLVING CHART BELOW:</th>
</tr>
</thead>
</table>
| **STEP 1.A**                          | GATHER INFORMATION:  
|                                       | TAKE A HISTORY                                                   | Example: 1  |
| **STEP 1.B**                          | GATHER INFORMATION:  
|                                       | DO A PHYSICAL EXAMINATION                                       |
| **STEP 2**                            | INTERPRET INFORMATION AND IDENTIFY PROBLEMS                      |
| **STEP 3**                            | DECIDE ON A PLAN OF CARE                                         |
| **STEP 4**                            | IMPLEMENT PLAN                                                  |
| **STEP 5**                            | EVALUATE RESULTS                                                |
| **STEP 6**                            | CONTINUE OR CHANGE PLAN                                         |
CASE STUDY EXERCISE: CLINICAL DECISION-MAKING

CASE STUDY 5.2: HOW DO WE MAKE DECISIONS IN CLINICAL CARE?

Purpose
This case study is to help you learn the decision-making steps by thinking about an example in everyday life.

Directions
Put the scenario step number that shows what clinical decision-making step Midwife Mary is taking into the clinical decision-making chart that follows.

Midwife Mary Caring for Mrs. A.

- Midwife Mary is caring for Mrs. A., who is in early labor. She wants to know the baby’s fetal heart rate, so she listens to the mother’s abdomen with a fetal stethoscope between contractions. She counts the beats and notes its regularity. She also notes that Mrs. A. is lying on her back.

- She remembers that the clinical guidelines state that the normal range for a fetal heart during early labor is 120–160 beats per minute. She notes that the fetal heart rate is 110 beats per minute.

- She decides to record the fetal heart rate on the partograph, to let Mrs. A. walk around and to help her to lie on her side whenever she is in bed.

- Midwife Mary continues to care for Mrs. A. as planned above.

- After 15 minutes, Midwife Mary listens to the fetal heart rate again and hears that it is 130 beats per minute and regular.

- Midwife Mary helps Mrs. A. to continue with ambulation and lying on her side and monitors the fetal heart rate every 30 minutes.
<table>
<thead>
<tr>
<th>DECISION-MAKING STEPS</th>
<th>PUT THE SCENARIO SENTENCE NUMBER THAT SHOWS WHAT DECISION-MAKING STEP MIDWIFE MARY IS TAKING INTO THE CHART BELOW:</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEP 1</td>
<td>GATHER INFORMATION:</td>
</tr>
<tr>
<td>STEP 2</td>
<td>INTERPRET INFORMATION AND IDENTIFY PROBLEMS</td>
</tr>
<tr>
<td>STEP 3</td>
<td>DECIDE ON A PLAN OF CARE</td>
</tr>
<tr>
<td>STEP 4</td>
<td>IMPLEMENT PLAN</td>
</tr>
<tr>
<td>STEP 5</td>
<td>EVALUATE RESULTS</td>
</tr>
<tr>
<td>STEP 6</td>
<td>CONTINUE OR CHANGE PLAN</td>
</tr>
</tbody>
</table>
KNOWLEDGE ASSESSMENT: CLINICAL DECISION-MAKING

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. The clinical decision-making process:
   a. Is continuous and ongoing
   b. Should be implemented repeatedly as the clinical situation changes
   c. Should be implemented repeatedly as different needs or problems arise
   d. a) and b)
   e. a) and c)
   f. All of the above

2. The development of a care plan is:
   a. Based on the findings of the assessment
   b. Individualized
   c. The collaborative responsibility of care provider, woman and family
   d. a) and b)
   e. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

3. Clinical decision-making occurs before developing a care plan and does not need to occur again for that client/patient.  

4. The first step in clinical decision-making is identifying the problem(s).  

5. Legally, if an intervention is not documented, it has not been performed.
Clinical Decision-Making

Best Practices in Maternal and Newborn Care

Session Objectives

By end of session, participants will be able to:

- Describe steps in clinical decision-making
- Apply clinical decision-making steps to real life clinical situations

Let’s look at a case study from everyday life

- Divide participants into groups of 2 to 5 participants to discuss CDM Case Study 1
- Following small group work, reassemble to discuss case study

What Is clinical decision-making?

- A purposeful, organized thinking process that links assessment with care provision and evaluation of care through series of logical steps
- Also known as:
  - Problem-solving approach
  - SOAP or SOAPIER
  - Decision-making approach
- Leads to purposeful, safe and effective care
Ongoing Process

- The clinical decision-making process is ongoing and occurs throughout the continuum of care:
  - The provider implements the process repeatedly as the clinical situation changes and different needs or problems emerge.

Clinical Decision-Making: Advantages

- Clinical decision-making helps the provider:
  - Collect info in an organized way, saving time and resources
  - Breaks process into clear steps to avoid “jumping the gun”
  - Use information so a problem or need can be correctly identified
  - Give focused care, avoiding unnecessary, inappropriate or excessive treatments or care
  - Evaluate the effectiveness of the care provided

Pass out copies of CDM Case Study 2

- Read the case study together
- Walk participants through each step, illustrating which step of decision-making process is involved
- Summarize with next slides

Steps in Clinical Decision-Making

1) Gather information/Make an observation:
   - History
   - Physical examination
   - Testing (labs, investigations)
   - Includes both what the provider observes and what the woman reports
   - The information gathered in this step is considered in the context of the other steps
Steps in Clinical Decision-Making (cont.)

2) Interpret information/Identify problems:
- Consider each sign/symptom in context of other findings
- Compare signs/symptoms to accepted descriptions/definitions of health and disease
- Consult reliable sources of up-to-date information
- Predict what may happen out of inaction and out of alternative actions

Steps in Clinical Decision-Making (cont.)

3) Develop care plan:
- Based on assessment/findings
- Individualized
- Collaborative – responsibility shared by care provider, woman and family

4) Implement care plan—also collaborative

Steps in Clinical Decision-Making (cont.)

5) Evaluate care plan:
- An ongoing process – monitor continuously
- Deem effective when:
  - Improves or maintains woman’s health
  - Restores abnormal findings to normal
  - Addresses woman’s needs
  - Is acknowledged as valuable by woman and her family

6) Change or continue action

Group Work

- Participants return to small groups.
- Each group is to take one situation in clinic or ward from their own experience while caring for a woman. Then divide the decision-making process into steps.
- Record steps on flip chart.
- Reassemble and select 2 groups to report to larger group.
Medico-Legal Issues

- While clinical decision-making is essential to sound care provision, documentation of:
  - Information gathered
  - Plan of care
  - Implementation of care
  - Evaluation and follow-up
  is essential to prevent litigation.
- If an intervention was not documented, it was not done.

Medico-Legal Case Study

- Mother who is G3P2 at 29 weeks gestation arrives in admission area, complaining of indigestion.
- Midwife examines woman, cervix is closed, no palpable contractions.
- Midwife teaches woman danger signs and when to return to hospital, including return if waters break or contractions begin or no improvement by next day.
- Midwife did not document teaching.
- Woman did not return when waters broke and bleeding started and baby died.
- Midwife/hospital sued and found guilty because if teaching was not documented, legally it is not considered to have happened.

References


**MODULE 6: BEST PRACTICES IN INFECTION PREVENTION—SESSION PLAN**

**MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE**

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Practices in Infection Prevention</td>
<td>120 min</td>
</tr>
</tbody>
</table>

**SESSION OBJECTIVES**

*By the end of this session, participants will be able to:*

- Describe the disease transmission cycle
- Outline key IP principles
- Discuss appropriate handwashing and antiseptics
- Discuss appropriate gloving and personal protective equipment
- Outline safe handling of sharps
- Discuss proper instrument processing and waste disposal

**Methods and Activities**

**Illustrated presentation/discussion: Infection prevention (30 min)**
- Ask questions of the larger group throughout the session.
- Intersperse presentation with questions, examples and discussion.
  - Be sure to cover:
    - The six stages of the disease transmission cycle
    - Ways to prevent disease transmission/spread
    - Importance of infection prevention
    - Handwashing: When and how
    - Alcohol handrub: What it is and how to make it
    - Antiseptics
    - Gloving: When and how
    - Personal protective equipment
    - Global statistics on occupational exposure
    - Safe handling of sharps
    - Instrument processing: Decontamination, cleaning, sterilization, HLD, storage
    - Housekeeping
    - Waste disposal

**Grab bag of questions (10 min)**
- Allow 12 people (or 12 pairs) to draw question from bag and answer.
- Provide correct answer following each question.

**Demonstration of IP practices (20 min)**
- Demonstrate:
  - Handwashing and gloving
  - Sharps disposal and passing sharps in container
  - Preparation of chlorine solution
  - Wrapping instruments for autoclave

**Materials/Resources**

- Boxlight projector
- PowerPoint presentation
- Overhead projector with transparencies (Handouts of presentations if no electricity)
- Grab bag with questions
- Surgical and exam gloves
- Simulated sink, water, soap
- Sharps container; container for passing sharps
- Simulated chlorine, water, bucket, measure
- Instruments and cloth for wrapping

**Allow participants to practice demonstrated skills (60 min).**
GRAB BAG QUESTIONS: INFECTION PREVENTION*

1. Immediately after a delivery, wash gloved hands in the labor room sink.

2. Clean labor bed with warm soapy water immediately after delivery.

3. How should you clean up a blood spill on the floor?

4. What should you wear for infection prevention when handling a baby after delivery before the baby has been bathed?

5. The best way to prevent needlestick injuries is to recap the needle immediately after use/

6. Always wear surgical gloves or exam gloves when cleaning.

7. When should a puncture-proof container be emptied?

8. If blood is spilled on the wall, how do you clean it?

9. How can you prevent cross-contamination when you dry your hands?

10. For how long should you wash your hands with soap and water before or after a delivery?

11. Using a brush to wash your hands will decrease the risk of infection.

12. Killing germs:

   a. What percentage of germs is killed by washing your hands with soap and water, and then rinsing?

   b. What percentage of germs is killed by washing with your hands with plain water?

* Adapted from “grab bag” questions developed by Annie Clark, CNM/ACNM.
KNOWLEDGE ASSESSMENT: INFECTION PREVENTION

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Infection prevention practices:
   a. Need only be used for clients/patients known to have an infectious disease
   b. Should be used for all clients/patients
   c. Decrease the risk of transmitting life-threatening diseases
   d. b) and c)

2. The single most practical procedure for preventing the spread of infection is:
   a. Wearing gloves
   b. Wearing a mask
   c. Handwashing
   d. All of the above

3. Hands should be washed:
   a. Before and after examining a client/patient
   b. After contact with blood, body fluids or soiled instruments, even if gloves are worn
   c. Before and after removing gloves
   d. Upon arriving at and before leaving the workplace
   e. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

4. Alcohols are excellent antiseptics for use on mucous membranes. _____

5. The risk of acquiring HIV through a needlestick injury is greater than the risk of acquiring hepatitis B through a needlestick injury. _____

6. Decontamination of soiled instruments should occur before washing/cleaning the instruments. _____
Session Objectives

By end of session, participants will be able to:
- Describe disease transmission cycle
- Outline key IP principles
- Discuss appropriate handwashing and antisepsis
- Discuss appropriate gloving and personal protective equipment
- Outline safe handling of sharps
- Discuss proper instrument processing and waste disposal

The Six Components of the Disease Transmission Cycle

1. Agent: Disease-producing microorganisms
2. Reservoir: Place where agent lives, such as in or on humans, animals, plants, soil, air, or water
3. Place of exit: Where agent leaves host
4. Mode of transmission: How agent travels from place to place (or person to person)
5. Place of entry: Where agent enters next host
6. Susceptible host: Person who can become infected

Question ??

- How can we prevent the spread of infection?
How can we prevent the spread of infection?

- Break disease-transmission cycle
- Inhibit or kill infectious agent (applying antiseptic to skin prior to surgery)
- Block agent’s means of getting from infected person to susceptible person (handwashing or using alcohol-based hand rub)
- Ensuring that people, especially healthcare workers, are immune or vaccinated

How can we prevent the spread of infection? (cont.)

- Providing health care workers with proper protective equipment to prevent contact with infectious agents
- Give some examples of ways to break transmission cycle (see notes)

Why is infection prevention important?

- Protects patients/clients—helps provide quality care that is also safe
- Lowers health care costs—prevention is less expensive than treatment
- Prevents infection among health care staff and community
- Limits number and spread of infectious agents that can become antibiotic-resistant

Question ??

- What is the most important infection prevention practice?
Handwashing

The single most practical procedure for preventing infection: Handwashing

- **When to wash hands:**
  - Before and after examining client
  - After contact with blood, body fluids or soiled instruments, even if gloves are worn
  - Before and after removing gloves
  - Upon arriving at and before leaving workplace

Handwashing: How to Wash Hands

- **Steps:**
  - Use a plain or antiseptic soap.
  - Vigorously rub lathered hands together for 10–15 seconds.
  - Rinse with clean running water from a tap or bucket.
  - Dry hands with a clean towel or air dry them.

Source: Larsen 1995.

Alcohol-Based Handrub

- More effective than handwashing unless hands are visibly soiled
- 2 mL emollient (e.g., glycerin) + 100 mL ethyl or isopropyl alcohol 60–90%
- Use 3 to 5 ml for each application and continue rubbing the solution over the hands until dry.

Antisepsis

- **Antisepsis for mucous membranes:**
  - Ask about allergic reactions
  - Use water-based product (e.g., iodophor or chlorhexidine), as alcohols may burn or irritate mucous membranes

- **Skin preparation for injections:**
  - If skin is clean, antisepsis is not necessary
  - If skin appears dirty, wash with soap and water
  - Before giving injection, dry with clean towel
When to Glove

- When there is reasonable chance of contact with broken skin, mucous membranes, blood, or other body fluids
- When performing invasive procedure
- When handling:
  - Soiled instruments
  - Medical, or contaminated, waste
  - When touching contaminated surfaces

Guidelines for Gloving

- Wear separate pair of gloves for each woman/newborn to prevent spreading infection from client to client
- What kind of gloves do you wear for:
  - Procedures involving contact with broken skin or tissue under skin?
  - Starting IV, drawing blood, or handling blood or body fluid?
  - Cleaning instruments, handling waste and cleaning up blood and body fluids?
  - Never wear gloves that are cracked, peeling or have holes.

Personal Protective Equipment

- Gloves: utility, examination, HLD/sterile
- Eyewear: face shields, goggles, glasses
- Aprons
  - Should be fluid-resistant
  - Should be decontaminated after use
- Protective footwear

What’s wrong with this picture?
Global Statistics on Occupational Exposure

- 3 million health care workers (HCWs) per year report needlestick injuries per year
- 2.5% HIV infections among HCWs are transmitted by needlestick injuries
- 40% of Hepatitis C and Hepatitis B infections among HCWs are transmitted by needlestick injuries (WHO, 2002)

Safe Handling of Sharps

- Never pass sharp instrument from one hand directly to another person’s hand
- After use, decontaminate syringes and needles by flushing three times with chlorine solution
- Immediately dispose of sharps in puncture-proof container
- Which is greatest, the risk of acquiring Hepatitis B or HIV from a needlestick injury?

Safe Handling of Sharps (cont.)

- Do not recap, bend, break, or disassemble needles before disposal
- Always use needle holder when suturing
- Never hold or guide needle with fingers

Instrument Processing

- Decontamination:
  - Should be done immediately after use
  - Makes objects safer to handle
  - How do you make a 0.5% chlorine solution for decontamination?
- Cleaning:
  - Most effective way to reduce number of organisms
  - Removes visible dirt and debris
Instrument Processing (cont.)

- **Sterilization:**
  - Destroys all microorganisms
  - Includes autoclave, dry heat, chemicals

- **High-level disinfection (HLD):**
  - Destroys all microorganisms except bacterial endospores
  - Includes boiling, steaming, soaking

- **Storage:**
  - After processing, must remain dry and clean

---

**DECONTAMINATION**
Soak in 0.5% Chlorine solution for 10 minutes

**THOROUGHLY WASH AND RINSE**
Wear glove and other protective barriers (glasses, visors or goggles)

<table>
<thead>
<tr>
<th>Preferred Method</th>
<th>Acceptable Methods</th>
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<tbody>
<tr>
<td><strong>STERILIZATION</strong></td>
<td><strong>HIGH-LEVEL DISINFECTION (HLD)</strong></td>
</tr>
<tr>
<td>Chemical</td>
<td>Chemical</td>
</tr>
<tr>
<td>Soak</td>
<td>Soak</td>
</tr>
<tr>
<td>10-24 hours</td>
<td>20 minutes</td>
</tr>
<tr>
<td>Autoclave</td>
<td>Boil or Steam</td>
</tr>
<tr>
<td>106 kPa pressure (15 lbs./in²)</td>
<td>Lid on</td>
</tr>
<tr>
<td>121°C (250°F)</td>
<td>20 minutes</td>
</tr>
<tr>
<td>20 min. unwrapped</td>
<td>Chemical</td>
</tr>
<tr>
<td>30 min. wrapped</td>
<td>Soak</td>
</tr>
<tr>
<td>170°C</td>
<td>20 minutes</td>
</tr>
</tbody>
</table>

**COOL**
(Use immediately or store)

---

**What’s wrong with this picture?**

- Each site should follow housekeeping schedule
- Always wear utility gloves when cleaning
- Clean from top to bottom
- Ensure that fresh bucket of disinfectant solution is available at all times

---

**Housekeeping**

- Each site should follow housekeeping schedule
- Always wear utility gloves when cleaning
- Clean from top to bottom
- Ensure that fresh bucket of disinfectant solution is available at all times
Housekeeping (cont.)

- Immediately clean up spills of blood or body fluids
- After each use, wipe off beds, tables and procedure trolleys using disinfectant solution
- Decontaminate cleaning equipment with chlorine solution

Waste Disposal

- Contaminated waste includes blood and other body fluids, and items that come into contact with them, such as dressings.
- Separate contaminated waste from noncontaminated waste
- Use puncture-proof container for sharps and destroy when two-thirds full

Waste Disposal (cont.)

- Follow these steps to destroy contaminated waste and sharps:
  - Add small amount of kerosene to burn
  - Burn contaminated waste in open area downwind from care site
  - Dispose of waste at least 50 meters away from water sources

Infection Prevention Grab Bag Game

- Pick a question and answer!
Summary

- Everyone (staff and patients) is at risk for infection
- This risk can be reduced through rigorous adherence to IP practices:
  - Handwashing or using alcohol-based handrub
  - Antisepsis
  - Personal protective equipment, including gloving
  - Safe handling of sharps and needles
  - Instrument processing
  - Housekeeping and waste disposal

References

Clark A. Grab bag of questions adapted from grab bag developed by A. Clark/ACNM.
Ganges F. 2006. Infection Prevention, a presentation in Accra, Ghana in Maternal and Newborn Care Technical Update. (April)
## MODULE 7: BEST PRACTICES IN FOCUSED ANTENATAL CARE—
### SESSION PLAN

### MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Practices in Focused Antenatal Care</td>
<td>240 min (4hrs)</td>
</tr>
</tbody>
</table>

### SESSION OBJECTIVES

*By the end of this session, participants will be able to:*

- Describe focused antenatal care (FANC)
- Describe basic elements of FANC assessment and care
- Define the elements of effective counseling
- Describe the elements of Birth Preparedness and Complication Readiness
- Calculate estimated date of delivery (EDD)
- Demonstrate the provision of focused antenatal care

### Methods and Activities

<table>
<thead>
<tr>
<th>Illustrated presentation/discussion: Focused antenatal care (30 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Illustrated presentation/discussion: Ask questions and provide answers and discussion throughout presentation. Include:</td>
</tr>
<tr>
<td>- Benefits of FANC</td>
</tr>
<tr>
<td>- Possible problems in ANC</td>
</tr>
<tr>
<td>- Description/definition of FANC</td>
</tr>
<tr>
<td>- Goals of FANC</td>
</tr>
<tr>
<td>- Fallacy of “risk approach”</td>
</tr>
<tr>
<td>- Antenatal clinical decision-making</td>
</tr>
<tr>
<td>- Elements of effective counseling</td>
</tr>
<tr>
<td>- Birth preparedness/complication readiness plan</td>
</tr>
</tbody>
</table>

### Discussion: Birth preparedness and complication readiness (30 min)

- Divide into groups of four to discuss birth preparedness/complication readiness questions displayed in PowerPoint slide.
- Reassemble and discuss answers in large group.

### Role Play: Client-provider interaction (20 min); this may follow session on malaria

- Allow volunteers to perform role play while the rest of participants follow with learning guide and determine answers to questions.
- Facilitate group discussion on role play and provider behavior.

### Exercises in use of pregnancy calculator (60 min)

- Divide participants into groups.
- Give groups examples: On Handout “Exercises for Calculating EDD” of LMP dates.
- Give instructions to participants to provide gestation and EDD.
- Ask one representative of each group to write the answer on the board.
- Determine the group that has the most correct answers at the end of all calculations to receive “prize.”

### Skills practice: Focused antenatal care (45 min)

- Review Learning Guide on Antenatal Care.
- Have participants divide into groups of two and practice provision of FANC according to Learning Guide.
- Facilitator(s) should rotate among groups to answer questions.

### Materials/Resources

- Boxlight projector
- PowerPoint presentation OR
- Overhead projector with transparencies (Handouts of presentations if no electricity)
- ANC equipment for role play
- Local ANC records/cards
- Role play
- Exercises for calculating EDD
- Flip charts or blackboard
- Markers or chalk
- Note paper

*Discussion of BP/CR may occur during another session depending on schedule.*
ROLE PLAY: LISTENING TO THE ANTENATAL CLIENT

DIRECTIONS

The facilitator/teacher will select two participants to perform the following roles: health care provider and antenatal client. The two participants taking part in the role play should take a few minutes to prepare for the activity by reading the background information provided below. The remaining participants, who will observe the role play, should also read the background information before the role play begins.

The purpose of the role play is to provide an opportunity for participants to understand the importance of good listening skills when providing antenatal care.

PARTICIPANT ROLES

Health care provider: The health care provider is an experienced midwife who has good listening skills.

Client: Mrs. A. is 19 years old. This is her second pregnancy.

SITUATION

Mrs. A. is 20 weeks’ pregnant and generally healthy. This is her second antenatal visit for this pregnancy. She has not had any pregnancy-related problems so far. Her first pregnancy was uncomplicated. She is not comfortable about being at the clinic because the midwife who provided antenatal care in her first pregnancy did not listen to what she had to say. In addition, the midwife she saw 2 months ago on her first visit for this pregnancy was hurried and did not listen to her. However, her mother-in-law has sent her to the clinic today. The midwife senses the client’s discomfort as she starts taking the interim antenatal history; she decides to use listening skills to make Mrs. A. feel comfortable.

FOCUS OF THE ROLE PLAY

The focus of the role play is the interpersonal interaction between the midwife and the woman, specifically appropriate listening skills.
EXERCISE: CALCULATING THE ESTIMATED DATE OF CHILDBIRTH

PURPOSE

The purpose of this exercise is to enable participants to practice calculating the estimated date of childbirth (EDC).

INSTRUCTIONS

The exercise can be done in small groups or individually:

- The facilitator/teacher should review the method for calculating the EDC with participants.
- Participants should answer Questions 1 through 5.
- The facilitator/teacher should distribute pregnancy calculators (gestational wheels) to participants and demonstrate how to use them.
- Participants should answer Questions 1 through 5 again, this time using pregnancy calculators. They should then compare the results with their original calculations.
- If pregnancy calculators are not available, the facilitator/teacher should review participants’ original calculations for accuracy.

RESOURCES

- Calendars
- Pregnancy calculators (gestational wheels)
- Guidelines for calculating the EDC

GUIDELINES FOR CALCULATING EDC

The following methods may be used to calculate EDC:

- Gestational age calendar, such as the pregnancy wheel
- Calendar method, based on the following formula:
  - The date of the first day of the LMP + 7 days – 3 months = EDC
  - For example: 9 May + 7 days – 3 months = 16 February
- Moon method (if her periods are usually one month, or four weeks, apart): If a woman’s last period starts on a full moon, her baby is due 10 full moons later. If her last period starts on a new moon, her baby is due 10 new moons later.
- Some prefer adding 9 months plus 7 days, but this is more cumbersome and may not be as accurate.
- Signs: Breast changes (4–8 weeks); Nausea (4–6 weeks); Awareness of baby’s movement (16–18 weeks for multigravida and 18–20 weeks for primigravida); Baby’s heartbeat heard (20 weeks by stethoscope, 11–12 weeks by Doptone, 22–24 weeks by Pinard).

- Questions 1 through 6 (next page)
- Answer Key to Questions 1 through 6 (Facilitator’s Notebook)
CALCULATING THE EDC

1. **Due Date—Calendar Method**
   - Add 7 days to the date of the first day of the last normal menstrual period.
   - Subtract 3 months.

2. **Gestation and Due Date—Gestation Wheel Method**
   - Calculate on the gestation/pregnancy wheel (if available).

**QUESTIONS (STATE MONTH AND DATE)**

1. Mrs. A. comes to the antenatal clinic on 3 January. She tells you that her last normal menstrual period started on 10 October. How many weeks pregnant is she? What is her EDC?

2. Mrs. B. comes to the antenatal clinic on 15 May. She tells you that her last normal menstrual period started on 6 March. How many weeks pregnant is she? What is her EDC?

3. Mrs. C. comes to the antenatal clinic on July 11. She tells you that her last normal menstrual period started on 6 March. How many weeks pregnant is she? What is her EDC?

4. Mrs. D. comes to the antenatal clinic on 15 May. She tells you that her last normal menstrual period started on 1 January. How many weeks pregnant is she? What is her EDC?

5. Mrs. E. comes to the antenatal clinic for first visit on 20 April. She tells you that her last normal menstrual period started on 10 November. How many weeks pregnant is she? What is her EDC?

6. Mrs. F. comes to the antenatal clinic for the first time today, 14 June. This is her first pregnancy. She does not have regular menses and does not remember when she had her last menses. She does remember that she felt some breast changes and nausea at the beginning of March and the baby began moving yesterday. On examination you measure her uterus at 1 cm below the umbilicus and you hear the fetal heart at 156 beats/min. Approximately how many weeks pregnant is she and when will her date of delivery be?
## SKILLS PRACTICE SESSION: FOCUSED ANTENATAL CARE

<table>
<thead>
<tr>
<th>PURPOSE</th>
<th>INSTRUCTIONS</th>
<th>RESOURCES</th>
</tr>
</thead>
</table>
| The purpose of this activity is to enable learners to practice those skills necessary to provide antenatal care, and to achieve competency in these skills. | This activity should be conducted in a simulated setting. | • Childbirth model  
• Stethoscope  
• Syphgmomanometer  
• Simulated tablets (SP)  
• Table for client or model  
• Sheets for draping  
• 0.5% chlorine solution and receptacle for decontamination  
• Leak-proof container or plastic bag |
| Learners should review Learning Guide for Antenatal Care before beginning the activity. | The facilitator/teacher should demonstrate the steps/tasks in each learning guide one at a time. Under the guidance of the facilitator/teacher, learners should then work in groups of three and practice the steps/tasks in the Learning Guide for Antenatal Care and observe each other’s performance; while one learner simulates her role as a pregnant client, another learner performs the skill, and the third learner should use the Learning Guide to observe performance. Learners should then rotate roles. | Learning Guide for Antenatal Care |
| Learners should be able to perform the steps/tasks before skills competency is assessed using the Checklist for Antenatal Care. | |

1 Content of Malaria and Other Causes of Fever in Pregnancy, as well as PMTCT content, should be incorporated into this skills practice session.
KNOWLEDGE ASSESSMENT: ANTENATAL CARE

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Antenatal care actions that may benefit the newborn include:
   a. Syphilis testing and treatment, if positive, of the mother
   b. Malaria prevention
   c. Screening and ARVs for HIV
   d. a) and b)
   e. a) and c)
   f. All of the above

2. Focused antenatal care should ideally:
   a. Be provided by physicians with appropriate skills
   b. Be individualized and woman-centered
   c. Be provided monthly after the fourth month and bi-weekly during the last month
   d. All of the above

3. Birth preparedness and complication readiness include the answers to such questions as:
   a. Where does she plan to deliver her baby?
   b. Who will accompany her in labor to her chosen center and how will she get there?
   c. Does she have money and other needed items ready and accessible?
   d. a) and c)
   e. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

4. An effective way for managing antenatal care is to assign women to either a “high-risk” or “low-risk” category. ____

5. Birth preparedness and complication readiness is only necessary for those women who we anticipate may have a problem. ____

Module 7: Focused Antenatal Care - 6
Best Practices in Maternal and Newborn Care
Learning Resource Package
**Session Objectives**

- Describe focused antenatal care (FANC)
- Describe basic elements of FANC assessment and care
- Describe the elements of Birth Preparedness and Complication Readiness
- Demonstrate the provision of focused antenatal care

**Objective of ANC**

- A healthy pregnancy
- A healthy outcome for mother and newborn
- Promotion of physical, mental and social health

**Benefits of FANC**

- ANC visits are a unique opportunity for early diagnosis and treatment of problems:
  - Maternal problems: anemia, vaginal bleeding, pre-eclampsia/eclampsia, infection, abnormal fetal position after 36 weeks
  - Fetal/newborn problems: abnormal fetal growth or movement, HIV, syphilis, malaria, malnutrition
Benefits to Newborn May Be Even Greater than Benefits to Mother

<table>
<thead>
<tr>
<th>Antenatal Care Action</th>
<th>Problem That May Be Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetanus immunization</td>
<td>Neonatal tetanus</td>
</tr>
<tr>
<td>Syphilis screening (RPR or VDRL)</td>
<td>Abortion, stillbirth, congenital syphilis</td>
</tr>
<tr>
<td>Screening and treatment of other STIs</td>
<td>Newborn gonococcal or chlamydial infections</td>
</tr>
<tr>
<td>Malaria prevention (Pl and ITNs)</td>
<td>Abortion, prematurity, low birth weight</td>
</tr>
<tr>
<td>Screening and APHs for HIV</td>
<td>HIV transmission to the infant/newborn</td>
</tr>
<tr>
<td>Screening and treatment for anemia and hookworm</td>
<td>Low birth weight</td>
</tr>
<tr>
<td>Microelement supplementation: iron, folate</td>
<td>Low birth weight, prematurity, placent cord</td>
</tr>
<tr>
<td>Drug ingestion and complications-readiness plan</td>
<td>delivery, prematurity</td>
</tr>
</tbody>
</table>

Source: Back et al. 2004

Question ??

- What problems have you seen with antenatal care?
- Why are there problems with antenatal care?

ANC: Why is there a problem?

- Quality of care is poor:
  - We gather information but do not use it to manage patient e.g., anemia
  - Poor clinical management of problems – eclampsia, bleeding in pregnancy
  - Failure to record relevant information
- Not women-friendly:
  - Factory assembly-line ANC system
  - Not client-specific
  - Women treated poorly so do not return
- Poor communication:
  - Poor counseling skills
  - Information and education are not relevant to the woman

A Midwife Says:

“What I dislike about the assembly line system was that I alone had to palpate about 150 pregnant women a day. There was no privacy during history taking and the women did not give us correct information . . . It was tedious work....”

— A care provider
**What FOCUSED ANC Means!**

An approach to ANC that emphasizes:
- Individualized care
- Client-centered
- Fewer but comprehensive visits
- Disease detection, not risk
- Classification
- Care by a skilled provider

**Four Goals of Focused ANC**

- Early detection and treatment of problems and complications
- Prevention of complications and disease
- Birth preparedness and complication readiness
- Health promotion

**The Focused ANC System**

- Privacy/confidentiality are assured
- Continuous care provided by same provider
- Promotes partner/support person involvement
- Adheres to national protocols
- Referral facilitated
- ANC, PNC and family planning services are linked and housed within the same location if possible

**“High Risk” Women and “Low Risk” Women**

- What are the benefits of assigning women to “risk” categories?
- What are the problems with assigning women to “risk” categories?
Why Risk Approach Is Not Effective!

- Complications cannot be predicted: All pregnant women are at risk
- Risk factors are not usually the direct cause of complications
- Many low-risk women develop complications
- Most high-risk women give birth without complications

Focused ANC Visit Schedule for the Healthy Client

- Four visits:
  - First <16 Weeks
  - Second 20–24
  - Third 28–30
  - Fourth 36
- It means good clinical decisions must be made at each visit

Making Good Clinical Decisions at ANC

- The steps:
  - Gathering information (history, exam, labs, etc.)
  - Interpreting information gathered
  - Developing a care plan
  - Implementing care plan
  - Evaluating care plan

Gathering Information: History

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<tr>
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<td>Present Preg Hx</td>
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Gathering Information: Examination

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<td>Breast</td>
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<td>Abdomen/Preg</td>
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<td>Genital</td>
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<tr>
<td>Pelvic Assess</td>
<td>PRN only</td>
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</tbody>
</table>

Gathering Information: Lab/Other Investigations, e.g., US

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<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
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</tr>
<tr>
<td>Hgb, RPR, HIV</td>
<td></td>
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<tr>
<td>Urine - according to local protocols</td>
<td></td>
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<tr>
<td>Albumin, Sugar</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Ultrasound</td>
<td>(PRN, NOT routine in FANC)</td>
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</tbody>
</table>

Care Plan: Appropriate Counseling and LEC

- Relevant to client needs
- Relevant to gestation
- Address discomforts of pregnancy
Basic Care Plan

- Minimum of four visits for the healthy client
- Anemia prevention
- Malaria prevention
- Prevention of HIV transmission
- Treatment/prevention other STIs
- Tetanus immunization
- Preparing birth and complication preparedness plan
- Education and counsel – nutrition, family planning, infant feeding, hygiene

Care Plan: Anemia Prevention

- Iron supplementation
- Folate supplementation
- Treat any factors that can cause anemia: worms, malaria, schisto, etc.
- Nutrition – foods rich in iron, folate and vitamin C

Question ??

Why bother with a birth preparedness and complication readiness plan?

Why Bother?

- Time of labor or time of emergency is not the time to decide what to do
- Increase the likelihood of using a skilled attendant as arrangements have been made
- Frequently women/families do not seek help because they do not know they have a problem – don’t know danger signs
- Some complications, e.g., hemorrhage, take only 2 hours until death – all plans must be in place
Question ??

- What are the elements of a birth preparedness and complication readiness plan?

The Birth Preparedness and Complication (BP/CR) Readiness Plan

- Facility or place of birth
- Skilled provider
- Transportation
- Funds
- Support person
- Decision-maker
- Blood donor
- Danger signs in labor

Birth Preparedness and Complication Readiness Plan (cont.)

- Where does she plan to deliver her baby?
- Who will accompany her in labor to her chosen center?
- How will she get to the health center?
- Does she have money and other needed items ready and accessible?

Birth Preparedness and Complication Readiness Plan (cont.)

- If she develops a complication before or during labor, how will she reach the nearest health facility?
- Where will she find money for any additional cost e.g., CS?
- If she needs blood, who will donate?
THANK YOU FOR YOUR ATTENTION

References


Deganus S. 2004. Improving quality of antenatal care at a district hospital in Ghana, a presentation in Accra, Ghana. (29 July)


Optional Slides

- Ghana: The Tema General Hospital Experience

Change at Tema General Hospital

- Antenatal Care:
  - Increased attendance
  - Booking earlier in pregnancy
  - Average client waiting time reduced by 1 hr 40 mins
  - Individualized care: Education and counseling more tuned to client needs
  - All care components by the same provider
  - Improved client-provider interaction
  - Same provider provides continuing care to the client at all visits
Antenatal Attendance: 1999–2003

The Impacts of Change (2)

- Labor and delivery:
  - Increased use of hospital delivery facilities (skilled attendant)
  - Decreased stillbirth rate
- Postnatal care:
  - Enhanced use of postnatal care services

Antenatal Booking and Skilled Attendance at Delivery: 1997–2003

Stillbirths and MMR: 1997–2003
Antenatal Care Bookings and Six-Week Postnatal Care Attendance: 1997–2003

Other Benefits of This Change

- Improved staff morale
- Improved provider skill levels
- More client-friendly facilities
- Better use of staff skills
- Improved status of hospital as
- Clinic is recognized as center of excellence
- Center serves as a site for introducing new ANC country programs e.g., PMTCT
- Commitment by care providers to continued quality improvement

“Since I started practicing individualized AN care, work has become very interesting. I know my clients better, they share their problems with me because of the privacy provided. Clients feel relaxed and at ease with me. I feel more concerned and also more obliged to address their health needs. My clients seem to appreciate more the care I give to them and sometimes shower me with thank-you cards and gifts. This makes me feel great….”

—ANC Care Provider

“There is still more room for improvement. There is still a lot to be learnt. We have a vision and we are working towards it.”

—“Matron in Charge”
# Module 8: Best Practices in Prevention and Management of Malaria and Other Causes of Fever in Pregnancy—Session Plan

## Maternal and Newborn Care: Technical Update

<table>
<thead>
<tr>
<th>Session</th>
<th>Topic</th>
<th>Time</th>
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<tbody>
<tr>
<td></td>
<td>Best Practices in Prevention and Management of Malaria and Other Causes of Fever in Pregnancy</td>
<td>45 min</td>
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</table>

## Session Objectives

By the end of this session, participants will be able to:

- Describe the effect of malaria on pregnant women and their newborns
- Discuss considerations in the transmission of malaria
- Describe the four main strategies to address malaria in pregnancy
- Define the main health education points for pregnant women living in malarious areas

## Methods and Activities

**Illustrated presentation/discussion:** Best practices in prevention and management of malaria and other causes of fever in pregnancy (45 min)
- Use questioning of group to draw out knowledge and experience of participants. (Suggested questions provided in PowerPoint presentation.)
- Discuss issues that arise during presentation and questioning.
- Be sure to include:
  - Basic facts of malaria epidemiology
  - Significance of malaria in pregnancy
  - Effects of malaria on mother and baby:
    - In stable areas of transmission
    - In unstable areas of transmission
  - Malaria transmission
  - HIV and malaria in pregnancy
  - Counseling of a pregnant woman in a malarious area
  - Intermittent preventive treatment
  - Insecticide-treated nets
  - SP resistance
  - Differentiation of uncomplicated and complicated malaria
  - Management of simple/uncomplicated malaria
  - Management of complicated malaria

## Materials/Resources

- Boxlight projector
- PowerPoint presentation OR
- Overhead projector with transparencies (Handouts of presentations if no electricity)
- Case Study

## Incorporate Content into Focused Antenatal Care Practice:

- Case Study – Since this case study is long, you may prefer to use it to facilitate a discussion during the ANC clinical practice session.
CASE STUDY: ANTENATAL ASSESSMENT AND CARE

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group developed.

CLIENT PROFILE

Mrs. B., a 26-year-old gravida 3/para 2, presents for her first antenatal clinic visit. Her children are 18 months and 8 months of age. Both are well. She and her family live in a rural village that is in a malaria-endemic area. You note that Mrs. B. looks pale and tired.

PRE-ASSESSMENT

1. Before beginning your assessment, what should you do for and ask Mrs. B.?

ASSESSMENT

(Information gathering through history, physical examination and testing)

2. What history will you include in your assessment of Mrs. B., and why?

3. What physical examination will you include in your assessment of Mrs. B., and why?

4. What laboratory tests will you include in your assessment of Mrs. B., and why?

DIAGNOSIS

(Interpreting information to identify problems/needs)

You have completed your assessment of Mrs. B. and your main findings include the following:

History:

- According to Mrs. B.’s menstrual history, she is 28 weeks pregnant.
- She admits to feeling weak, tired and dizzy.
- She reports that she has been treated for malaria twice in the past 12 months; the most recent episode was 4 months ago, during which she was treated with antimalarial drugs. She denies any symptoms of malaria now.
- She reports that she had no signs or symptoms of anemia during her previous pregnancies.
- She is not taking any medication at present.
- She and her family have an adequate food supply at present, but Mrs. B.’s appetite has been poor lately.
- Mrs. B.’s mother-in-law provides some help with childcare and housework.
- All other aspects of her history are normal or without significance.
Physical examination:
- Mrs. B. has mild conjunctival pallor.
- All other aspects of her physical examination are within normal range.
- Her blood pressure is 100/68, and her temperature is 37.6°C. (Although temperature is not a routine part of antenatal care, because she comes from a malarious area, this is part of the assessment.)
- Her breast exam is normal.
- Mrs. B’s fundal height measurement is 28 weeks, consistent with the EDC.
- Fetal heart rate is 136 beats/minute and regular.
- The genital exam is normal.

Testing:
- Hemoglobin is 9 g/dL.
- Other test results: RPR – non-reactive; HIV – negative; blood type - O, Rh-positive.

5. Based on these findings, what is Mrs. B.'s diagnosis (problem/need), and why?

CARE PROVISION
(Implementing plan of care and interventions)

6. Based on your diagnosis (problem/need identification), what is your plan of care for Mrs. B., and why?

EVALUATION

Mrs. B. comes back to the antenatal clinic on the appointed date, and on assessment your findings are as follows:
- She has taken her iron/folate tablets as directed, even though she has had mild constipation.
- She has been able to rest more because her mother-in-law has provided more help than usual. She also reports that her appetite has improved.
- She appears less tired and is not as pale, generally, as she was at her first antenatal visit. She says that she “feels much better.”
- On physical examination, you find that she still has mild conjunctival pallor.
- She does not have a fever.
- The fetal heart rate is normal, and Mrs. B. says that the fetus is active.
- Mrs. B.’s hemoglobin is now 10 g/dL. It was also measured at the last visit.

7. Based on these findings, what is your continuing plan of care for Mrs. B.?
KNOWLEDGE ASSESSMENT: PREVENTION AND MANAGEMENT OF MALARIA AND OTHER CAUSES OF FEVER IN PREGNANCY

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Malaria affects:
   a. Nearly as many people as TB and HIV combined
   b. Twice as many people as TB, HIV, leprosy and measles combined
   c. Five times as many people as TB, HIV, leprosy and measles combined

2. In malaria-endemic areas, malaria during pregnancy may account for:
   a. Up to 15% of maternal anemia
   b. 5–14% of low birth weight
   c. 30% of “preventable” low birth weight (LBW)
   d. a) and b)
   e. All of the above

3. Malaria prevention and control in pregnancy includes:
   a. Focused antenatal care and health education
   b. Intermittent preventive treatment (IPT)
   c. Insecticide-treated nets (ITNs)
   d. Case management of malaria illness
   e. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

4. Malaria is less severe in women during their first or second pregnancies than it is in subsequent pregnancies.  

5. In areas of unstable malaria transmission, malaria in pregnancy is often asymptomatic.  

6. Women who are HIV + have increased resistance to malaria.  

7. IPT should not be used during the first 16 weeks of pregnancy.  

8. Quinine is the drug of choice for the treatment of complicated malaria.  

Session Objectives

- Describe the effect of malaria on pregnant women and their newborns
- Discuss considerations in the transmission of malaria
- Describe the four main strategies to address malaria in pregnancy
- Define the main health education points for pregnant women living in malarious areas
- Describe general assessment of a woman with fever during pregnancy

Malaria Facts

- 300 million malaria cases each year worldwide
- 9 of 10 cases occur in Africa
- An African dies of malaria every 10 seconds
- Affects 5 times as many as TB, AIDS, measles and leprosy combined

Significance of Malaria in Pregnancy

- 30 million African women are pregnant yearly
- Malaria more frequent and severe during pregnancy:
  - Women in 1st or 2nd pregnancy more at risk
Question ??

- What are the effects of malaria on the mother and unborn baby?

Why is malaria important for pregnant women?

- In malaria-endemic areas, malaria during pregnancy may account for:
  - Up to 15% of maternal anemia
  - 5–14% of low birth weight (LBW)
  - 30% of “preventable” low birth weight

Malaria Transmission

- Caused by *Plasmodium Falciparum* parasites
- Spread through female *Anopheles* mosquitoes, which bite mainly at night
- Infected mosquito bites a human
- Malaria parasites reproduce in human bloodstream
- Mosquito bites an infected person, and then goes on to bite and infect another person

Effect of Malaria

The effect of malaria on the pregnant woman can range from mild to severe, depending on her immunity. Level of immunity depends on:

- Intensity of malaria transmission – stable to unstable areas
- Number of previous pregnancies (women with first pregnancy has less immunity than woman having more than two pregnancies)
- Presence of other conditions, such as HIV, which can lower immune response
Effect of Malaria on Pregnancy: Stable Transmission Areas

- Asymptomatic Infection
- Altered Placental Integrity
- Placenta Attacked by Parasites
- Reduced Nutrient & Oxygen Transport

- Anemia
- Low Birth Weight (IUGR)

Effect of Malaria on Pregnancy: Unstable Transmission Areas

- Acquired immunity - low
- Clinical illness
- Severe disease
- Risk to mother
- Risk to fetus

HIV/AIDS and Malaria in Pregnancy

- Being HIV+ reduces woman’s resistance to malaria:
  - Higher risk of malaria
- Malaria treatment less effective
- Increased maternal anemia
- Increased risk of pre-term birth and LBW
- Malaria increases risk of an HIV+ woman transmitting HIV to her baby

Malaria Control during Pregnancy

1. Focused antenatal care and health education
2. Intermittent preventive treatment (IPT)
3. Insecticide-treated nets (ITNs)
4. Case management of malaria disease
1. FANC and Health Education

- In Africa, at least 70% of women have at least one antenatal visit, a unique opportunity for:
  - Health education/counseling about malaria in pregnancy
  - Provision of iron and folate
  - IPT
  - Prompt diagnosis and treatment of malaria

Question ??

- What are some points you want to remember when counseling a pregnant woman in a malarious area?

Health Education Points

- Malaria transmitted by mosquito bites
- Pregnant women and children most at risk
- Pregnant women infected with malaria may have no symptoms
- Women with HIV/AIDS are at higher risk
- Can lead to severe anemia, abortion, LBW
- Malaria is preventable
- Malaria can be easily treated if recognized early

Health Education Points (cont.)

- Control mosquito breeding
- Prevent mosquitoes from biting (and kill mosquitoes before they bite) – Insecticidetreated nets: where to find them, how to use them, how they work
- Kill malaria parasites in the blood – Intermittent preventive treatment: how it works, the importance of returning to receive all recommended doses
2. Intermittent Preventive Treatment

- Based on the assumption that every woman in a malaria-endemic area is infected with malaria
- Recommends that every pregnant woman receives at least 2 treatment doses of an effective malaria drug
- Sulfadoxine-pyrimethamine (SP or Fansidar) currently considered most effective IPT drug

IPT

- IPT with sulfadoxine-pyrimethamine:
  - Single dose: 3 tablets taken at once, preferably under direct observation
  - Fansidar is the most common brand name; Others include Falcidin, Laradox, Maladox
  - SP generally more effective than chloroquine because of increasing prevalence of chloroquine resistance

IPT Timing of Doses

- SP should be avoided during first 16 weeks of pregnancy:
  - Initial development of fetus and organ formation
  - Period of slow rate of growth
- Give first dose after quickening:
  - Clear parasites during period of maximum fetal growth

IPT Timing of Doses (cont.)

- WHO Recommendation:
  - IPT should be given to all pregnant women at regularly scheduled ANC visits after quickening (after 16 weeks gestation).
  - Ideal ANC visit schedule of four visits, three after quickening: IPT should be given at these ANC visits after quickening
Steps for Providing IPT

- Follow local protocol
- Determine quickening has occurred
- Inquire about allergies to sulfa drugs (history of severe skin rash)
- Inquire about use of SP in the last month
- Provide 3 tablets of SP with clean water in a clean cup
- Observe the patient swallowing all 3 tablets (DOT)

Steps for Providing IPT (cont.)

- Record SP on the antenatal card and on clinic record
- Instruct patient to return at next schedule visit or sooner if there are danger signs or she is feeling ill
- Ask about side effects about previous dose before giving the next dose, which should not be less than 4 weeks from the last dose

IPT – Instructions for SP

- Contraindications to using SP:
  - Do NOT give to women taking Septrin, Cotrimoxazole or other sulfa-containing drugs, plus ask about the use of these medicines before giving SP
  - Do not give SP more frequently than monthly, plus be sure at least 1 month has passed since the last dose of SP

IPT Precautions

- HIV+ women taking cotrimoxazole prophylaxis do not need IPT; they should sleep under an ITN
- Women taking iron and folate may continue to take it every day after receiving IPT as long as the dose of folate is not more than 0.4 mg (400 micrograms); Normally women receive 0.4 mg/day
3. Insecticide-Treated Nets

- Reduce transmission by physically preventing mosquitoes from landing on sleeping persons
- Repel and kill mosquitoes that come in contact with the net
- Kill other insects like cockroaches, lice, bedbugs and ticks
- Should be used by pregnant women as early during the pregnancy as possible and throughout pregnancy and postpartum

ITNs: How to Use Them

- Hang above bed or sleeping mat
- Tuck under mattress or mat
- Use every night, all year long
- Use for everybody, but if not enough ITNs for everyone, give priority to pregnant women, infants and children
- Remember to use a variety of methods to prevent bites

Summary of Health Education Points

- Administer intermittent preventive treatment (IPT) with SP at least twice during pregnancy (according to country policy) at regularly scheduled ANC visits after quickening, but not more often than monthly
- Sleep under ITNs every night
- Use a variety of methods to prevent bites

4. Case Management

- Drug efficacy
- Effective drugs are needed for *P. falciparum*
- Drug of choice depends on geographic drug resistance profile
- ACTs preferred treatment for uncomplicated malaria in 2nd or 3rd trimester
- Quinine drug of choice for complicated first trimester malaria
SP Resistance

- Resistance of *P. falciparum* to SP has been increasing across Africa
- WHO recommends that where resistance has not reached high levels, countries continue to use SP for IPT as it is still effective for prevention of malaria in pregnancy
- No new drugs available to take the place of SP for IPT
- ITN use remains one of the best prevention measures available to women and families

Case Management

- First decide whether malaria is uncomplicated or severe
- If uncomplicated—manage according to national protocol
- If severe—refer immediately to higher level of care; consider giving first dose of anti-malarial if available and the provider is familiar with its use

Question ??

How do you differentiate simple malaria from severe malaria in a pregnant woman?

Recognizing Malaria in Pregnant Women

**Uncomplicated malaria**

- Fever
- Shivering/chills
- Headaches
- Muscle/joint pains
- Nausea/vomiting
- False labor pains

**Severe**

- Signs of uncomplicated malaria, plus:
  - Dizziness
  - Breathlessness
  - Sleepy/drowsy
  - Confusion/coma
  - Sometimes fits, jaundice, severe dehydration
Managing Simple Malaria

- Provide first line anti-malarial drugs:
  - Follow country guidelines:
    - In first trimester, usually quinine
    - In second and third trimesters, some countries now use artemisinin-combined therapy (ACT)
- Manage fever:
  - Analgesics, tepid sponging
- Diagnose and treat anemia
- Provide fluids

Fever during Pregnancy

- Temperature of 38°C or higher
- Malaria is NOT the only cause of fever:
  - Bladder or kidney infection
  - Typhoid
  - Pneumonia
  - Uterine infection
- Careful history and physical (including labs as needed) to rule out other causes

Fever during Pregnancy (cont.)

- Ask about or examine for:
  - Type, duration, degree of fever
  - Signs of other infections:
    - Chest pain/difficulty breathing
    - Pain when urinating/foul smelling urine
    - Foul-smelling watery vaginal discharge
    - Tender/painful uterus or abdomen
  - Signs of severe malaria or other danger signs

Fever during Pregnancy (cont.)

- Refer the woman immediately if you suspect anything other than simple malaria
Treatment Follow-Up

- Arrange follow-up within 48 hours
- Advise to return if condition worsens
- Review danger signs
- Reinforce use of ITNs

Referral

- Refer immediately if:
  - Condition does not improve within 48 hours of starting treatment
  - Condition worsens and/or other symptoms appear
  - Signs/symptoms suggestive of severe malaria
  - Recurrence of malaria symptoms within 14 days of starting treatment

Treating Severe Malaria

- Rule out other causes of convulsions/comas, such as eclampsia
- Refer severe complicated malaria:
  - If referral delayed or arrival time prolonged, treatment pre-referral with artesunate or artemisinin by rectum or IM or quinine IM (WHO 2006)
- Manage fever
- Correct dehydration and hypoglycemia as needed
- Control convulsions (fits)
- Monitor/treat for complications such as severe anemia and kidney failure

Summary of Case Management

- Successful management of simple malaria requires prompt, complete treatment
- Know the signs of simple and severe malaria
- Fever is not caused only by malaria
- Malaria that recurs within 2 weeks is possibly resistant: Treat with second line drug
- Early referral for severe malaria avoids complications
References


Ouma P et al. 2005. Does folic acid supplementation affect the efficacy of sulfadoxine-pyrimethamine in clearance of maternal *P. falciparum* parasitemia? Results of a randomized placebo-controlled trial. Presentation to the American Society of Tropical Medicine and Hygiene. (December)

References (cont.)


# Module 9: Best Practices in Care during Labor and Childbirth—Session Plan

## Maternal and Newborn Care: Technical Update

<table>
<thead>
<tr>
<th>Session</th>
<th>Topic</th>
<th>Time</th>
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<tbody>
<tr>
<td></td>
<td>Best Practices in Care during Labor and Childbirth, including AMTSL, Assisted Vaginal Birth, Breech Birth, and Episiotomy and Repair</td>
<td>240 min</td>
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</table>

### Session Objectives

**By the end of this session, participants will be able to:**

- Identify best practices for managing labor and childbirth, including:
  - Skilled attendant
  - Birth preparedness/complication readiness
  - Partograph
  - Active management of the third stage of labor
  - Restricted episiotomy and repair
- Identify harmful practices with the goal of eliminating them from practice

### Methods and Activities

#### Illustrated Presentation/Discussion: Best practices in care for labor and childbirth (30 min)
- Use questions and discussion throughout presentation as indicated on slides.
- Be sure to cover the following topical areas:
  - Objectives of care during labor and childbirth
  - Importance of the time of labor and childbirth
  - Birth preparedness and complication readiness
  - Partograph
  - Actions for obstructed labor
  - Restricted use of episiotomy
  - Infection prevention during labor and birth
  - Active management of the third stage of labor
  - Monitoring immediately after birth
  - Positions in labor and childbirth
  - Support during labor and childbirth
  - Harmful practices during labor and childbirth
  - Practices used for specific interventions

  - Exercise below is inserted within the PowerPoint presentation.

#### Exercise: Use of partograph (60 min)*
- Read each step of the Partograph Exercise to the class, plot information on the poster-size partograph.
- At same time, learners plot information on partograph form.
- For second (and third, if time) exercise, read each step to class and have learners plot information on their own partograph form.
- Answer questions as they arrive. Observe individual learners to ensure they are plotting correctly.
- Summarize key points of partograph plotting.
- May also choose to use partographs taken from clinical records/experience and to use as few or as many as appropriate.

### Materials/Resources

- Boxlight projector
- PowerPoint presentation
- Overhead projector with transparencies (Handouts of presentations if no electricity)
- Videos if available:
  - Birth in the Squatting Position
  - Delivery Self Attachment
- Blank partograph forms
- Copy (copies) of exercise
- Copy of Skills Practice Session
- Copies of Learning Guides and Checklists for Assisting Normal Birth, Active Management of the Third Stage of Labor, Breech Birth, Episiotomy and Repair
- Large laminated partograph
- Childbirth simulator
- Syringes and vials
- High-level disinfected or surgical gloves
- Personal protective barriers
- Delivery kit/pack
- Episiotomy repair set
- Suture material and needles
- 0.5% chlorine solution and receptacle for decontamination
- Leak-proof container or plastic bag

### Case Studies (Optional if time permits during class or clinical practice):
- If during class session: Divide participants into two groups. Give each group one case study. Instruct them to read, discuss and answer questions; After 30 min., reassemble group and discuss answers to each case study.
<table>
<thead>
<tr>
<th>Methods and Activities</th>
<th>Materials/Resources</th>
</tr>
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<tbody>
<tr>
<td>• If during clinical situation: Give any group of students that is not occupied</td>
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<tr>
<td>with a client/patient (i.e., students who have “down time”) a case study to read</td>
<td></td>
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<tr>
<td>and answer questions. Discuss the answers with the group.</td>
<td></td>
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<tr>
<td>Video: Birth in Squatting Position with discussion (30 min)</td>
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<tr>
<td>Video: Delivery Self Attachment with discussion (30 min)</td>
<td></td>
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<tr>
<td>**Skills demonstration and practice: Normal birth: Active management of third stage</td>
<td></td>
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<tr>
<td>of labor, birth with vacuum extractor, assisting a breech birth, and episiotomy</td>
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<tr>
<td>and repair (195 min)</td>
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<tr>
<td><strong>Demonstration:</strong> (45 min)</td>
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<tr>
<td>Distribute learning guides and demonstrate:</td>
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<tr>
<td>• Assisting normal birth</td>
<td></td>
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<tr>
<td>• Active management of the third stage of labor</td>
<td></td>
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<tr>
<td>• Episiotomy and repair</td>
<td></td>
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<tr>
<td>• Assisting a breech birth</td>
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<tr>
<td><strong>Practice:</strong> (150 min)</td>
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<tr>
<td>Divide participants into three groups to practice each skill with a model. One</td>
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<tr>
<td>practices while others in group follow with learning guide. Participants rotate</td>
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<tr>
<td>within small group until all have practiced. They then rotate to another skill</td>
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<tr>
<td>station.</td>
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<tr>
<td>**NOTE: Activities in this session may be implemented across several hours or</td>
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<tr>
<td>several days and may be interspersed with other sessions depending on class</td>
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<tr>
<td>schedule.</td>
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<tr>
<td>• Session on Best Practices in Care of the Newborn may be inserted into this session</td>
<td></td>
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<tr>
<td>prior to skills demonstration and practice since Immediate Newborn Care is part of</td>
<td></td>
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<tr>
<td>Normal Labor and Childbirth.</td>
<td></td>
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<tr>
<td>• Session on Best Practices in Care of Assisted Breech Birth and Using the Partograph</td>
<td></td>
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<tr>
<td>may be included in this module or treated as a separate module.</td>
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<tr>
<td>* If the facilitator/teacher prefers, she/he may use real charts of women who have</td>
<td></td>
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<tr>
<td>recently labored/ delivered for partograph exercise, being careful to block out</td>
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<tr>
<td>names and any other identifying information.</td>
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</tr>
</tbody>
</table>
CASE STUDY 9.1: CHILDBIRTH ASSESSMENT AND CARE
(SUPPORT IN LABOR)

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group developed.

CLIENT PROFILE

Mrs. A. is 30 years of age. She attended the antenatal clinic 2 weeks ago and has now come to the hospital with her mother-in-law because labor pains started 3 hours ago. Mrs. A. reports that the pains start in her back and move forward, last 20 seconds, and occur about every 8 minutes. Mrs. A. appears very anxious.

PRE-ASSESSMENT

1. Before beginning your assessment, what should you do for and ask Mrs. A.?

ASSESSMENT
(Information gathering through history, physical examination, and testing)

2. What history will you include in your assessment of Mrs. A., and why?

3. What physical examination will you include in your assessment of Mrs. A., and why?

4. What laboratory tests will you include in your assessment of Mrs. A., and why?

DIAGNOSIS
(Interpreting information to identify problems/needs)

You have completed your assessment of Mrs. A. and your main findings include the following:

History:

- Mrs. A. is 39 weeks pregnant.
- This is her second pregnancy.
- Her first pregnancy and birth were uncomplicated, although she repeatedly states that labor was more painful than she had expected.
- She confirms that labor started 3 hours ago and that contractions seem to be growing increasingly longer and more frequent.
- All other aspects of her history are normal or without significance.
Physical Examination:

- Mrs. A. kneels to the floor and cries out with each contraction.
- On measurement of vital signs: Respirations are 18 per minute; BP is 120/82; pulse is 88 beats per minute; temperature is 37.8°C.
- On abdominal examination:
  - Fundal height is 33 cm.
  - Presenting part is four-fifths above the pelvic brim.
  - Fetal heart tones are 124 beats per minute.
  - Contractions are irregular every 8–10 minutes and last 14–18 seconds.
- On cervical examination:
  - Dilation of the cervix is 3 cm.
  - Membranes are intact.
  - Presentation is vertex and there is no molding.
  - Her physical exam reveals no abnormal findings.

Testing:

- Blood group is O Positive, RPR is negative, and blood was taken for HIV testing.

5. Based on these findings, what is Mrs. A.'s diagnosis (problem/need) and why?

CARE PROVISION
(Implementing plan of care and interventions)

6. Based on your diagnosis (problem/need identification), what is your plan of care for Mrs. A., and why?

EVALUATION

- Mrs. A. continues to have regular contractions; by 2 hours after admission, she is having 2 contractions in 10 minutes, each lasting 20–40 seconds.
- Maternal pulse remains between 80 and 88 beats per minute; fetal heart rate remains between 150 and 160 beats per minute.
- Mrs. A.’s level of anxiety remains high and she continues to become agitated during contractions.

7. Based on these findings, what is your continuing plan of care for Mrs. A., and why?
CASE STUDY 9.2: CHILDBIRTH ASSESSMENT AND CARE (SUPPORT IN CHILDBIRTH)

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group developed.

CLIENT PROFILE

Mrs. B. is 25 years of age. Her mother-in-law has brought her to the hospital and reports that she has been in labor for 8 hours and that her membranes ruptured 3 hours ago. You greet Mrs. B. and her mother-in-law respectfully and with kindness. On arrival at the hospital, she had a strong contraction lasting 45 seconds. Because she is showing signs of labor, you complete the Quick Check to detect signs/symptoms of life-threatening complications and, finding none, quickly proceed to physical examination to determine whether birth is imminent. Although Mrs. B. is not pushing, you find that she has a bulging, thin perineum.

ASSESSMENT (Information gathering through history, physical examination, and testing)

1. What history will you include in your assessment of Mrs. B., and why?
2. What physical examination will you include in your assessment of Mrs. B., and why?
3. What laboratory tests will you include in your assessment of Mrs. B., and why?

DIAGNOSIS (Interpreting information to identify problems/needs)

You have completed your assessment of Mrs. B. and your main findings include the following:

History:

- Mrs. B. is at term.
- This is her fourth pregnancy.
- Her previous pregnancies/deliveries were uncomplicated.
- All other aspects of her history are normal or without significance.

Physical Examination:

- Vital signs are as follows: Respirations are 20 per minute; BP is 130/82; pulse is 88 beats per minute; temperature is 37.8°C.
- On abdominal examination:
• No scars are noted and uterus is oval-shaped.
• Fundal height is 34 cm.
• One set of fetal parts is palpable.
• Fetus is longitudinal in lie and cephalic presentation.
• Presenting part is not palpable above the symphysis.
• Fetal heart tones are 148 per minute.
• Bladder is not palpable.
• Contractions are 3 per 10 minutes, 40–50 seconds in duration each.

• On genital and cervical examination:
  • Her cervix is 10 cm dilated and fully effaced.
  • Presentation is vertex and the fetal head is on the perineum.
  • Visible amniotic fluid is clear.

• All other aspects of her physical examination are within normal range.

Testing:

• Test results not yet back at this stage.

4. Based on these findings, what is Mrs. B.'s diagnosis (problem/need), and why?

CARE PROVISION (Implementing plan of care and interventions)

5. Based on your diagnosis (problem/need identification), what is your plan of care for Mrs. B., and why?

EVALUATION

• Mrs. B. has 3 contractions every 10 minutes, each lasting more than 40 seconds.
• After 15 minutes, she begins pushing spontaneously with each contraction.
• After another 15 minutes, she has a spontaneous vertex birth of a baby boy. The baby breathes immediately at birth.
• The third stage of labor has not yet been completed.

6. Based on these findings, what is your continuing plan of care for Mrs. B., and why?
EXERCISE: USING THE PARTOGRAPH

PURPOSE

The purpose of this exercise is to enable learners to use the partograph to manage labor.

INSTRUCTIONS

The facilitator/teacher should review the partograph form with learners before beginning the exercise.

RESOURCES

The following equipment or representations thereof:

- Partograph forms (three for each learner)
- Poster-size laminated partograph
- Exercise: Using the Partograph Answer Key

Each learner should be given three blank partograph forms.

Case 1: The facilitator/teacher should read each step to the class, plot the information on the poster-size laminated partograph and ask the questions included in each of the steps. At the same time, learners should plot the information on one of their partograph forms.

Case 2: The facilitator/teacher should read each step to the class and have learners plot the information on another of their partograph forms. The questions included in each step should be asked as they arise.

Case 3: The facilitator/teacher should read each step to the class and have learners plot the information on the third of their partograph forms. The questions should then be asked when the partograph is completed.

Throughout the exercise, the facilitator/teacher should ensure that learners have completed their partograph forms correctly.

The facilitator/teacher should provide learners with the three completed partograph forms from the Answer Key and have them compare these with the partograph forms they have completed. The facilitator/teacher should discuss and resolve any differences between the partographs completed by learners and those in the Answer Key.
USING THE MODIFIED WHO PARTOGRAPH

The WHO partograph has been modified to make it simpler and easier to use. The latent phase has been removed and plotting on the partograph begins in the active phase when the cervix is 4 cm dilated. Record the following on the partograph:

**Patient information:** Fill out name, gravida, para, hospital number, date and time of admission, and time of ruptured membranes or time elapsed since rupture of membranes (if rupture occurred before charting on the partograph began).

Fetal heart rate: Record every half hour.

**Amniotic fluid:** Record the color of amniotic fluid at every vaginal examination:
- I: membranes intact;
- R: membranes ruptured;
- C: membranes ruptured, clear fluid;
- M: meconium-stained fluid;
- B: blood-stained fluid.

**Moulding:**
- 1: sutures apposed;
- 2: sutures overlapped but reducible;
- 3: sutures overlapped and not reducible.

**Cervical dilatation:** Assessed at every vaginal examination and marked with a cross (X). Begin plotting on the partograph at 4 cm.

**Alert line:** A line starts at 4 cm of cervical dilatation to the point of expected full dilatation at the rate of 1 cm per hour.

**Action line:** Parallel and 4 hours to the right of the alert line.
Descent assessed by abdominal palpation: Refers to the part of the head (divided into five parts) palpable above the symphysis pubis; recorded as a circle (O) at every abdominal examination. At 0/5, the sinciput (S) is at the level of the symphysis pubis.

Hours: Refers to the time elapsed since onset of active phase of labor (observed or extrapolated).

Time: Record actual time.

Contractions: Chart every half hour; count the number of contractions in a 10-minute time period, and their duration in seconds.

- Less than 20 seconds:
- Between 20 and 40 seconds:
- More than 40 seconds:

Oxytocin: Record the amount of oxytocin per volume IV fluids in drops per minute every 30 minutes when used.

Drugs given: Record any additional drugs given.

Pulse: Record every 30 minutes and mark with a dot (•).

Blood pressure: Record every 4 hours and mark with arrows.

Temperature: Record every 2 hours.

Protein, acetone and volume: Record when urine is passed.
CASE 1

Step 1

- Mrs. A. was admitted at 05.00 on 12.9.2003
- Membranes ruptured 04.00
- Gravida 3, Para 2+0
- Hospital number 7886
- On admission the fetal head was 4/5 palpable above the symphysis pubis and the cervix was 2 cm dilated

Q: What should be recorded on the partograph?

Note: Mrs. A. is not in active labor. Record only the details of her history, i.e., first four bullets, not the descent and cervical dilation.

Step 2

- 09.00:
  - The fetal head is 3/5 palpable above the symphysis pubis
  - The cervix is 5 cm dilated

Q: What should you now record on the partograph?

Note: Mrs. A. is now in the active phase of labor. Plot this and the following information on the partograph:

- 3 contractions in 10 minutes, each lasting 20–40 seconds
- Fetal heart rate (FHR) 120
- Membranes ruptured, amniotic fluid clear
- Sutures of the skull bones are apposed
- Blood pressure 120/70 mmHg
- Temperature 36.8°C
- Pulse 80/minute
- Urine output 200 mL; negative protein and acetone

Q: What steps should be taken?
Q: What advice should be given?
Q: What do you expect to find at 13.00?
Step 3

Plot the following information on the partograph:

- 09.30 FHR 120, Contractions 3/10 each 30 seconds, Pulse 80/minute
- 10.00 FHR 136, Contractions 3/10 each 30 seconds, Pulse 80/minute
- 10.30 FHR 140, Contractions 3/10 each 35 seconds, Pulse 88/minute
- 11.00 FHR 130, Contractions 3/10 each 40 seconds, Pulse 88/minute, Temperature 37°C
- 11.30 FHR 136, Contractions 4/10 each 40 seconds, Pulse 84/minute, Head is 2/5 palpable
- 12.00 FHR 140, Contractions 4/10 each 40 seconds, Pulse 88/minute
- 12.30 FHR 130, Contractions 4/10 each 45 seconds, Pulse 88/minute
- 13.00 FHR 140, Contractions 4/10 each 45 seconds, Pulse 90/minute, Temperature 37°C

- 13.00:
  - The fetal head is 0/5 palpable above the symphysis pubis
  - The cervix is fully dilated
  - Amniotic fluid clear
  - Sutures apposed
  - Blood pressure 100/70 mmHg
  - Urine output 150 mL; negative protein and acetone

**Q:** What steps should be taken?

**Q:** What advice should be given?

**Q:** What do you expect to happen next?

Step 4

Record the following information on the partograph:

- 13.20: Spontaneous birth of a live female infant weighing 2,850 g

Answer the following questions:

**Q:** How long was the active phase of the first stage of labor?

**Q:** How long was the second stage of labor?
CASE 2

Step 1

- Mrs. B. was admitted at 10.00 on 12.9.2003
- Membranes intact
- Gravida 1, Para 0+0
- Hospital number 1443

Record the information above on the partograph, together with the following details:

- The fetal head is 5/5 palpable above the symphysis pubis
- The cervix is 4 cm dilated
- 2 contractions in 10 minutes, each lasting less than 20 seconds
- FHR 140
- Membranes intact
- Blood pressure 100/70 mmHg
- Temperature 36.2°C
- Pulse 80/minute
- Urine output 400 mL; negative protein and acetone

Q: What is your diagnosis?

Q: What action will you take?

Step 2

- Plot the following information on the partograph:
  10.30  FHR 140, Contractions 2/10 each 15 sec, Pulse 90/minute
  11.00  FHR 136, Contractions 2/10 each 15 sec, Pulse 88/minute
  11.30  FHR 140, Contractions 2/10 each 20 sec, Pulse 84/minute
  12.00  FHR 136, Contractions 2/10 each 15 sec, Pulse 88/minute, Temperature 36.2°C, Membranes intact

- 12.00:
  - The fetal head is 5/5 palpable above the symphysis pubis
  - The cervix is 4 cm dilated, membranes intact

Q: What is your diagnosis?

Q: What action will you take?
Step 3

Plot the following information on the partograph:

12.30  FHR 136, Contractions 1/10 each 15 sec, Pulse 90/minute
13.00  FHR 140, Contractions 1/10 each 15 sec, Pulse 88/minute
13.30  FHR 130, Contractions 1/10 each 20 sec, Pulse 88/minute
14.00  FHR 140, Contractions 2/10 each 20 sec, Pulse 90/minute, Temperature 36.8°C, Blood pressure 100/70 mmHg

- 14:00:
  - The fetal head is 5/5 palpable above the symphysis pubis
  - Urine output 300 mL; negative protein and acetone

Q: What is your diagnosis?

Q: What will you do?

Plot the following information on the partograph:

- 14:00:
  - The cervix is 4 cm dilated, sutures apposed
  - Labor augmented with oxytocin 2.5 units in 500 mL IV fluid at 10 drops per minute (dpm)
  - Membranes artificially ruptured, clear fluid

Step 4

Plot the following information on the partograph:

- 14.30:
  - 2 contractions in 10 minutes, each lasting 30 seconds
  - Infusion rate increased to 20 dpm
  - FHR 140, Pulse 90/minute

- 15.00:
  - 3 contractions in 10 minutes, each lasting 30 seconds
  - Infusion rate increased to 30 dpm
  - FHR 140, Pulse 90/minute

- 15:30:
  - 3 contractions in 10 minutes, each lasting 30 seconds
  - Infusion rate increased to 40 dpm
  - FHR 140, Pulse 88/minute
16.00:
- Fetal head 2/5 palpable above the symphysis pubis
- Cervix 6 cm dilated; sutures apposed
- 3 contractions in 10 minutes, each lasting 30 seconds
- Infusion rate increased to 50 dpm
- FHR 144, Pulse 92/minute
- Amniotic fluid clear

16.30:
- 3 contractions in 10 minutes, each lasting 45 seconds
- FHR 140, Pulse 90/minute
- Infusion remains at 50 dpm

Q: What steps would you take?

Step 5

17.00  FHR 138, Pulse 92/minute, Contractions 3/10 each 40 sec, Maintain at 50 dpm
17.30  FHR 140, Pulse 94/minute, Contractions 3/10 each 45 sec, Maintain at 50 dpm
18.00  FHR 140, Pulse 96/minute, Contractions 4/10 each 50 sec, Maintain at 50 dpm
18.30  FHR 144, Pulse 94/minute, Contractions 4/10 each 50 sec, Maintain at 50 dpm

Step 6

Plot the following information on the partograph:
- 19.00:
  - Fetal head 0/5 palpable above the symphysis pubis
  - 4 contractions in 10 minutes, each lasting 50 seconds
  - FHR 144, Pulse 90/minute
  - Cervix fully dilated

Step 7

Record the following information on the partograph:
- 19.30:
  - 4 contractions in 10 minutes, each lasting 50 seconds
  - FHR 142, Pulse 100/minute
- 20.00:
  - 4 contractions in 10 minutes, each lasting 50 seconds
  - FHR 146, Pulse 110/minute
20.10:
- Spontaneous birth of a live male infant weighing 2,654 g

Answer the following questions:

Q: How long was the active phase of the first stage of labor?
Q: How long was the second stage of labor?
Q: Why was labor augmented?
CASE 3

Step 1

- Mrs. C. was admitted at 10.00 on 12.9.2003
- Membranes ruptured 09.00
- Gravida 4, Para 3+0
- Hospital number 6639

Record the information above on the partograph, together with the following details:

- Fetal head 3/5 palpable above the symphysis pubis
- Cervix 4 cm dilated
- 3 contractions in 10 minutes, each lasting 30 seconds
- FHR 140
- Amniotic fluid clear
- Sutures apposed
- Blood pressure 120/70 mmHg
- Temperature 36.8°C
- Pulse 80/minute
- Urine output 200 mL; negative protein and acetone

Step 2

Plot the following information in the partograph:

10.30 FHR 130, Contractions 3/10 each 35 sec, Pulse 80/minute
11.00 FHR 136, Contractions 3/10 each 40 sec, Pulse 90/minute
11.30 FHR 140, Contractions 3/10 each 40 sec, Pulse 88/minute
12.00 FHR 140, Contractions 3/10 each 40 sec, Pulse 90/minute, Temperature 37°C, Head 3/5 palpable
12.30 FHR 130, Contractions 3/10 each 40 sec, Pulse 90/minute
13.00 FHR 130, Contractions 3/10 each 45 sec, Pulse 88/minute
13.30 FHR 120, Contractions 3/10 each 45 sec, Pulse 88/minute
14.00 FHR 130, Contractions 4/10 each 45 sec, Pulse 90/minute, Temperature 37°C, Blood pressure 100/70 mmHg

14:00:

- Fetal head 3/5 palpable above the symphysis pubis
- Cervix 6 cm dilated, amniotic fluid clear
- Sutures overlapped but reducible
Step 3

14.30  FHR 120, Contractions 4/10 each 40 sec, Pulse 90/minute, Clear fluid
15.00  FHR 120, Contractions 4/10 each 40 sec, Pulse 88/minute, Blood-stained fluid
15.30  FHR 100, Contractions 4/10 each 45 sec, Pulse 100/minute
16.00  FHR 90, Contractions 4/10 each 50 sec, Pulse 100/minute, Temperature 37°C
16.30  FHR 96, Contractions 4/10 each 50 sec, Pulse 100/minute
17.00  FHR 90, Contractions 4/10 each 50 sec, Pulse 110/minute

- 17:00:
  - Fetal head 3/5 palpable above the symphysis pubis
  - Cervix 6 cm dilated
  - Amniotic fluid meconium stained
  - Sutures overlapped and not reducible
  - Urine output 100 mL; protein negative, acetone 1+

Step 4

Record the following information on the partograph:

- Cesarean section at 17.30, live female infant with poor respiratory effort and weighing 4,850 g

Answer the following questions:

Q: What is the final diagnosis?
Q: What action was indicated at 14.00, and why?
Q: What action was indicated at 15.00, and why?
Q: At 17.00, a decision was taken to do a cesarean section, and this was rapidly done. Was this a correct action?
Q: What problems may be expected in the newborn?
**SKILLS PRACTICE SESSION: NORMAL BIRTH WITH NEWBORN CARE, ACTIVE MANAGEMENT OF THE THIRD STAGE OF LABOR, BIRTH ASSISTED WITH A VACUUM EXTRACTOR, BREECH BIRTH, EPISIOTOMY AND REPAIR, AND NEWBORN ASSESSMENT**

<table>
<thead>
<tr>
<th>PURPOSE</th>
<th>INSTRUCTIONS</th>
<th>RESOURCES</th>
</tr>
</thead>
</table>
| The purpose of this activity is to enable learners to practice use of Active Management of the Third Stage of Labor (AMTSL), episiotomy and repair of an episiotomy or laceration, and normal newborn care as a part of Assisting Normal Birth and to achieve competency in the skills required. | This activity should be conducted in a simulated setting. (Most faculty will already be skilled in normal care, so this practice is to ensure that new evidence-based practices are incorporated into teaching and practice.) | • Childbirth simulator with baby and placenta  
• Vacuum extractor  
• Pieces of foam for episiotomy and repair  
• Syringes and vial  
• High-level disinfected or surgical gloves  
• Personal protective barriers  
• Delivery kit/pack  
• Episiotomy/Laceration Repair kit/pack  
• 0.5% chlorine solution and receptacle for decontamination  
• Leak-proof container or plastic bag |
| Learners should review Learning Guides for: Assisting a Normal Birth, Active Management of Third Stage of Labor, Episiotomy and Repair, Breech Birth, and Newborn Assessment before beginning the activity. | Learners should review Learning Guides for: Assisting a Normal Birth, Active Management of Third Stage of Labor, Episiotomy and Repair, Breech Birth, and Newborn Assessment before beginning the activity. | Learning Guides: Assisting at Normal Birth, Active Management of the Third Stage of Labor, Breech Birth, Episiotomy and Repair, Newborn Assessment |
| The facilitator/teacher should demonstrate the steps/tasks in each learning guide one at a time. Under the guidance of the facilitator/teacher, learners should then work in pairs and practice the steps/tasks in each individual Learning Guide and observe each other’s performance; while one learner performs the skill, the second learner should use the relevant section of each Learning Guide to observe performance. Learners should then reverse roles. | The facilitator/teacher should demonstrate the steps/tasks in each learning guide one at a time. Under the guidance of the facilitator/teacher, learners should then work in pairs and practice the steps/tasks in each individual Learning Guide and observe each other’s performance; while one learner performs the skill, the second learner should use the relevant section of each Learning Guide to observe performance. Learners should then reverse roles. | Learning Guides: Assisting at Normal Birth, Active Management of the Third Stage of Labor, Breech Birth, Episiotomy and Repair, Newborn Assessment |
| Learners should be able to perform the steps/tasks relevant each skill before skills competency is assessed in a simulated setting. A number of skills are incorporated into the Assisting at Normal Birth checklist. | Learners should be able to perform the steps/tasks relevant each skill before skills competency is assessed in a simulated setting. A number of skills are incorporated into the Assisting at Normal Birth checklist. | Checklists: Assisting at Normal Birth, Active Management of the Third Stage of Labor, Breech Birth, Episiotomy and Repair, Newborn Assessment |

---

1 Since the mother and baby are a dyad/unit, normal newborn care is incorporated into care at normal birth.
KNOWLEDGE ASSESSMENT: LABOR AND CHILDBIRTH

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. If a woman is admitted during the first stage/active phase of labor, cervical dilatation is plotted on the partograph:
   a. To the left of the alert line
   b. To the right of the alert line
   c. On the alert line
   d. On the action line

2. Elements that need to be included in a birth preparedness/complication readiness plan include:
   a. Skilled attendant and place of birth
   b. Funds and transportation in case of an emergency
   c. Danger signs and potential blood donors
   d. a) and b)
   e. All of the above

3. Before applying controlled cord traction during active management of the third stage of labor:
   a. Oxytocin is administered intramuscularly and the birth attendant waits for the uterus to contract:
   b. The mother is asked to push
   c. Pressure is applied to the fundus
   d. All of the above

4. During active management of the third stage of labor:
   a. Begin controlled cord traction 3 minutes after administration of oxytocin
   b. Clamp and cut the cord as soon as possible after the birth of the baby
   c. The uterus should be massaged to keep the uterus contracted
   d. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

5. The benefits of a policy of routine episiotomy for primigravid women outweigh the disadvantages since many primigravidas sustain lacerations.  
   ______

6. The highest risk of hemorrhage occurs during the second stage of labor.  
   ______

7. Active management of the third stage of labor is routine only for those women who are at increased risk of a postpartum hemorrhage.  
   ______

8. The use of non-invasive, non-pharmacological methods of pain relief during labor (massage, relaxation techniques, etc.) has been shown to be associated with use of less analgesia, fewer operative vaginal births and less postpartum depression.  
   ______
Session Objectives

- To identify best practices for managing labor and childbirth:
  - Birth preparedness/complication readiness
  - Partograph
  - Active management of the third stage of labor
  - Restricted episiotomy
- To identify harmful practices with the goal of eliminating them from practice

Objectives of Care during Labor and Childbirth

- Protect the life of the mother and newborn
- Support the normal labor and detect and treat complications in timely fashion
- Support and respond to needs of the woman, her partner and family during labor and childbirth

Question ??

- At what time during pregnancy and childbirth do most deaths occur?
When is the mother most vulnerable? (Evidence from Matlab, Bangladesh)

<table>
<thead>
<tr>
<th>Days</th>
<th>Deaths per 1000 person year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>120</td>
</tr>
<tr>
<td>Day 2</td>
<td>40</td>
</tr>
<tr>
<td>Day 3-7</td>
<td>20</td>
</tr>
<tr>
<td>Day 8-42</td>
<td>10</td>
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<td>Day 43-90</td>
<td>5</td>
</tr>
<tr>
<td>Day 91-180</td>
<td>2</td>
</tr>
<tr>
<td>Day 181-365</td>
<td>1</td>
</tr>
</tbody>
</table>

Why do we need to be prepared for birth and complications?
- Acting quickly is important because a woman could die in a short period of time:
  - In antepartum hemorrhage, she can die in just 12 hours.
  - In postpartum hemorrhage, she can die in just 2 hours.
  - With complications of eclampsia, in as few as 12 hours, and
  - With sepsis, in about 3 days!

Why do we need to be prepared for birth and complications? (cont.)
- Delay is a significant factor in many maternal and newborn deaths and disabilities:
  - Recognizing the problem
  - Deciding to seek care
  - Reaching and receiving care
- Birth preparedness and complication readiness to reduce delays

Question ??
- What are the elements that should be included in birth preparedness and complication readiness?
Birth Preparedness and Complication Readiness for the Woman and Family

- Plan place for delivery
- Choose provider
- Recognize danger signs
- Plan for managing complications
- Save money or access funds
- Arrange transportation
- Identify potential blood donors

Birth Preparedness and Complication Readiness for the Provider

- Diagnose and manage problems and complications appropriately and in a timely manner
- Arrange referral to higher level of care if needed
- Provide women-centered counseling about birth preparedness and complication readiness
- Educate community about birth preparedness and complication readiness

Complication Readiness for the Provider

- Recognize and respond to danger signs
- Be knowledgeable and skilled in managing complications
- Have emergency equipment, drugs and supplies in working order and ready to use

Partograph and Criteria for Active Labor

- Label with identifying info
- Note FHR, color of amniotic fluid, moulding, contraction pattern, medications given
- Plot cervical dilation
- Alert line starts at 4 cm—then, expect dilatation at rate of 1 cm/hour
- Action line: If labor does not progress as above, action is required
WHO Partograph Trial

- Objectives:
  - To evaluate impact of WHO partograph on labor management and outcome
  - To devise and test protocol for labor management with partograph
- Design: Multicenter trial randomizing hospitals in Indonesia, Malaysia and Thailand
- No intervention in latent phase until after 8 hours
- At active phase action line, consider: oxytocin augmentation, cesarean section, or observation AND supportive treatment


WHO Partograph: Results of Study

<table>
<thead>
<tr>
<th></th>
<th>Before Implementation</th>
<th>After Implementation</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total deliveries</td>
<td>18254</td>
<td>17230</td>
<td></td>
</tr>
<tr>
<td>Labor &gt; 18 hours</td>
<td>6.4%</td>
<td>3.4%</td>
<td>0.002</td>
</tr>
<tr>
<td>Labor augmented</td>
<td>20.7%</td>
<td>9.1%</td>
<td>0.023</td>
</tr>
<tr>
<td>Postpartum sepsis</td>
<td>0.70%</td>
<td>0.21%</td>
<td>0.028</td>
</tr>
<tr>
<td>Normal Women</td>
<td>8428 (83.9%)</td>
<td>7869 (86.3%)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td></td>
<td>341 (3.4%)</td>
<td>227 (2.5%)</td>
<td>0.005</td>
</tr>
</tbody>
</table>

Mode of delivery

- Spontaneous cephalic
- Forceps


Individual Work

- Complete partograph exercise(s)
- Review with reassembled group

What actions might you take in the event of obstructed labor?

- Cesarean section
- Episiotomy
- Assisted vaginal birth:
  - Using vacuum extractor
  - Using forceps
Restricted Use of Episiotomy: Objectives and Design

- **Objective:** To evaluate possible benefits, risks and costs of restricted use of episiotomy vs. routine episiotomy
- **Design:** Meta-analysis of six randomized control trials

Carroli and Belizan 2000.

Restricted Use of Episiotomy: Maternal Outcomes Assessed

- Severe vaginal/perineal trauma
- Need for suturing
- Posterior/anterior perineal trauma
- Perineal pain
- Dyspareunia
- Urinary incontinence
- Healing complications
- Perineal infection

Source: Carroli and Belizan 2000.

Restricted Use of Episiotomy: Results of Cochrane Review

<table>
<thead>
<tr>
<th>Clinically Relevant Morbidities</th>
<th>Relative Risk</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posterior perineal trauma</td>
<td>0.88</td>
<td>0.84–0.92</td>
</tr>
<tr>
<td>Need for suturing</td>
<td>0.74</td>
<td>0.71–0.77</td>
</tr>
<tr>
<td>Healing complications at 7 days</td>
<td>0.69</td>
<td>0.56–0.85</td>
</tr>
<tr>
<td>Anterior perineal trauma</td>
<td>1.79</td>
<td>1.55–2.07</td>
</tr>
</tbody>
</table>

- No increase in incidence of major outcomes (e.g., severe vaginal or perineal trauma nor in pain, dyspareunia or urinary incontinence)
- Incidence of 3rd degree tear reduced (1.2% with episiotomy, 0.4% without)
- No controlled trials on controlled delivery or guarding the perineum to prevent trauma


Indicated Use of Episiotomy: Reviewers’ Conclusions

- Implications for practice: Clear evidence to restrict use of episiotomy in normal labor
- Implications for research: Further trials needed to assess use of episiotomy at:
  - Assisted delivery (forceps or vacuum)
  - Preterm delivery
  - Breech delivery
  - Predicted macrosomia
  - Presumed imminent tears (threatened 3rd degree tear or history of 3rd degree tear with previous delivery)

Sources: Carroli and Belizan 2000; WHO 1999.
Clean Delivery

- Infection accounts for 11% of all maternal deaths
- Infection/pneumonia accounts for 26% of newborn deaths
- Tetanus accounts for 7% of newborn deaths
- These deaths can be largely avoided with infection prevention practices

Infection Prevention Practices

- Use disposable materials once and decontaminate reusable materials throughout labor and childbirth
- Wear gloves during vaginal examination, during birth of newborn and when handling placenta
- Wear protective clothing (shoes, apron, glasses)
- Wash hands
- Wash perineum with soap and water and keep it clean
- Ensure that surface on which newborn is delivered is kept clean
- High-level disinfect instruments, gauze and ties for cutting cord

Third Stage

- Time of greatest/most rapid physiologic change and highest risk of hemorrhage
- Uterus as a muscle, must contract to stop bleeding
- Placenta must separate from wall of uterus and be delivered

Best Practices: Third Stage of Labor

- Offer active management of third stage for ALL women:
  - Oxytocin administration
  - Controlled cord traction
  - Uterine massage after delivery of the placenta to keep the uterus contracted
- Routine examination of the placenta and membranes
- Routine examination of vagina and perineum for lacerations and injury

Question??

How effective is active management of the third stage of labor at preventing postpartum hemorrhage?

ICM/FIGO Joint Statement on Active Management of the Third Stage of Labor (AMTSL)

- AMSTL has been proven to reduce the incidence of postpartum hemorrhage, reduce the quantity of blood loss and reduce the use of transfusion
- AMSTL should be offered to all women who are giving birth
- Every attendant at birth needs to have the knowledge, skills and critical judgment needed to carry out AMSTL

ACTIVE vs. EXPECTANT MANAGEMENT OF THIRD STAGE

<table>
<thead>
<tr>
<th>Event</th>
<th>95% CI</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postpartum hemorrhage ≥ 500 ml</td>
<td>0.38 (0.32-0.46)</td>
<td></td>
</tr>
<tr>
<td>Loss of blood ≥ 1000 ml</td>
<td>0.33 (0.21-0.51)</td>
<td></td>
</tr>
<tr>
<td>Maternal hemoglobin 24–48 h postpartum &lt; 9 g/l</td>
<td>0.40 (0.29-0.59)</td>
<td></td>
</tr>
<tr>
<td>Need for transfusion</td>
<td>0.34 (0.22-0.53)</td>
<td></td>
</tr>
<tr>
<td>Third stage &gt; 40 min</td>
<td>0.18 (0.14-0.24)</td>
<td></td>
</tr>
<tr>
<td>Manual removal of placenta</td>
<td>1.21 (0.92-1.78)</td>
<td></td>
</tr>
<tr>
<td>Postpartum curettage</td>
<td>0.74 (0.43-1.28)</td>
<td></td>
</tr>
<tr>
<td>Vomiting</td>
<td>2.19 (1.88-2.56)</td>
<td></td>
</tr>
<tr>
<td>Nausea</td>
<td>1.83 (1.51-2.23)</td>
<td></td>
</tr>
<tr>
<td>Apgar &lt; 7 at 5th min</td>
<td>1.00 (0.38-2.66)</td>
<td></td>
</tr>
<tr>
<td>Newborn admission to ICU</td>
<td>0.82 (0.60-1.11)</td>
<td></td>
</tr>
<tr>
<td>No breastfeeding at discharge</td>
<td>0.92 (0.82-1.04)</td>
<td></td>
</tr>
</tbody>
</table>

Best Practices: Labor and Childbirth

- Use non-invasive, non-pharmacological methods of pain relief during labor (massage, relaxation techniques, etc.):
  - Less use of analgesia OR 0.68 (CI 0.58–0.79)
  - Fewer operative vaginal deliveries OR 0.73 (95% CI 0.62–0.88)
  - Less postpartum depression at 6 weeks OR 0.12 (CI 0.04–0.33)
- Offer oral fluids throughout labor and childbirth

Best Practices: Postpartum

Mother
- Close monitoring and surveillance during first 6 hours postpartum:
  - Parameters:
    - Blood pressure, pulse, vaginal bleeding, uterine hardness
  - Timing:
    - Every 15 minutes for 2 hours
    - Every 30 minutes for 1 hour
    - Every hour for 3 hours

Newborn
- Babies should begin breastfeeding as soon as possible after birth (preferably within the first hour)
- Colostrum should be given to the baby and not thrown away

Position in Labor and Childbirth

- Allow freedom in position and movement throughout labor and childbirth
- Encourage any non-supine position:
  - Side lying
  - Squatting
  - Hands and knees
  - Semi-sitting
  - Sitting

Position in Labor and Childbirth (cont.)

Use of upright or lateral position compared with supine or lithotomy position is associated with:
- Shorter second stage of labor (5.4 minutes, 95% CI 3.9–6.9)
- Fewer assisted deliveries (OR 0.82, CI 0.69–0.98)
- Fewer episiotomies (OR 0.73, CI 0.64–0.84)
- Fewer reports of severe pain (OR 0.59, CI 0.41–0.83)
- Less abnormal heart rate patterns for fetus (OR 0.31, CI 0.11–0.91)
- More perineal tears (OR 1.30, CI 1.09–1.54)
- Blood loss > 500 mL (OR 1.76, CI 1.34–3.32)

Source: Gupta and Nikodem 2000.

Support of Woman

- Give woman as much information and explanation as she desires
- Provide care in labor and childbirth at a level where woman feels safe and confident
- Provide empathetic support during labor and childbirth
- Facilitate good communication between caregivers, the woman and her companions
- Continuous empathetic and physical support is associated with shorter labor, less medication and epidural analgesia, and fewer operative deliveries

Presence of Female Relative during Labor: Results

RCT in Botswana: 53 women with relative; 56 without

<table>
<thead>
<tr>
<th>Labor Outcome</th>
<th>Experimental Group (%)</th>
<th>Control Group (%)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous vaginal delivery</td>
<td>91</td>
<td>71</td>
<td>0.03</td>
</tr>
<tr>
<td>Vacuum delivery</td>
<td>4</td>
<td>16</td>
<td>0.03</td>
</tr>
<tr>
<td>Cesarean section</td>
<td>6</td>
<td>13</td>
<td>0.03</td>
</tr>
<tr>
<td>Analgesia</td>
<td>53</td>
<td>73</td>
<td>0.03</td>
</tr>
<tr>
<td>Amniotomy</td>
<td>30</td>
<td>54</td>
<td>0.01</td>
</tr>
<tr>
<td>Oxytocin</td>
<td>13</td>
<td>30</td>
<td>0.03</td>
</tr>
</tbody>
</table>


Presence of Female Relative during Labor: Conclusion

Support from female relative improves labor outcomes


Harmful Routines

- Use of enema: uncomfortable, may damage bowel, does not change duration of labor, incidence of neonatal infection or perinatal wound infection
- Pubic shaving: discomfort with regrowth of hair, does not reduce infection, may increase transmission of HIV and hepatitis
- Lavage of the uterus after delivery: can cause infection, mechanical trauma or shock
- Manual exploration of the uterus after delivery


Harmful Practices

- Examinations:
  - Rectal examination: Similar incidence of puerperal infection, uncomfortable for woman
  - Routine use of x-ray pelvimetry: Increases incidence of childhood leukemia
- Position:
  - Routine use of supine position during labor
  - Routine use of lithotomy position with or without stirrups during labor

Harmful Interventions

- Administration of oxytocin at any time before delivery in such a way that the effect cannot be controlled
- Sustained, directed bearing down efforts during the second stage of labor
- Massaging and stretching the perineum during the second stage of labor (no evidence)
- Fundal pressure during labor


Inappropriate Practices

- Restriction of food and fluids during labor
- Routine intravenous infusion in labor
- Repeated or frequent vaginal examinations, especially by more than one caregiver
- Routinely moving laboring woman to a different room at onset of second stage
- Encouraging woman to push when full dilation or nearly full dilation of cervix has been diagnosed, before woman feels urge to bear down


Inappropriate Practices (cont.)

- Rigid adherence to a stipulated duration of the second stage of labor (e.g., 1 hour) if maternal and fetal conditions are good and there is progress of labor
- Liberal or routine use of episiotomy
- Liberal or routine use of amniotomy

Practices Used for Specific Clinical Indications

- Bladder catheterization
- Operative delivery
- Oxytocin augmentation
- Pain control with systemic agents
- Pain control with epidural analgesia
- Continuous electronic fetal monitoring
Normal Labor and Childbirth: Conclusion

- Have a skilled attendant present
- Use partograph
- Use specific criteria to diagnose active labor
- Restrict use of unnecessary interventions
- Use active management of third stage of labor
- Support woman’s choice for position during labor and childbirth
- Provide continuous emotional and physical support to woman throughout labor

Demonstrations

- Normal labor and birth including newborn care
- Active management of third stage of labor
- Use of vacuum extractor for assisting birth
- Episiotomy and repair
- Review of learning guides
- Demonstration by teacher/facilitator
- Practice by learners
- Return demonstration

References


References (cont.)

## SUPPLEMENTARY MODULE 9.1: BEST PRACTICES IN MANAGING LABOR USING THE PARTOGRAPH—SESSION PLAN

### MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Practices in Managing Labor Using the Partograph</td>
<td>120 min</td>
</tr>
</tbody>
</table>

### SESSION OBJECTIVES

**NOTE:** All of the content of this session is contained in *Best Practices in Labor and Childbirth*. Therefore, this session would not be taught if *Best Practices in Labor and Childbirth* has already been included.

**By the end of this session, participants will be able to:**
- Discuss the importance of using a partograph
- Understand how to fill in a partograph
- Understand how to use a partograph in decision-making

### Methods and Activities

**Illustrated presentation/discussion: Best practices in managing labor using the partograph (30 min)**
- Use questions and discussion throughout presentation as indicated on slides.
- Be sure to include all of the following topical areas:
  - Usefulness of the partograph:
    - For assessing progress of labor
    - For assessing fetal well-being
    - For assessing maternal well-being
  - How to fill in the partograph
  - Alert and action lines
- Exercise below is inserted within the corresponding PowerPoint presentation.

**Exercise: Use of partograph (90 min)**
- For first exercise, read each step of the Partograph Exercise to the class, and plot information on the poster-size partograph.
- At same time, learners plot information on partograph form.
- For second (and third, if time) exercise, read each step to class and have learners plot information on their own partograph form.
- Answer questions as they arise. Observe individual learners to ensure they are plotting correctly.
- Summarize key points of partograph plotting.
- Facilitator/Teacher may also choose to use partographs taken from clinical records/experience and to use as few or as many as appropriate.

### Materials/Resources

- Boxlight projector
- PowerPoint presentation
  OR
- Overhead projector with transparencies (Handouts of presentations if no electricity)
- Blank partograph forms
- Copy (copies) of exercise
EXERCISE: USING THE PARTOGRAPH

PURPOSE

The purpose of this exercise is to enable learners to use the partograph to manage labor.

INSTRUCTIONS

The facilitator/teacher should review the partograph form with learners before beginning the exercise.

Each learner should be given three blank partograph forms.

Case 1: The facilitator/teacher should read each step to the class, plot the information on the poster-size laminated partograph and ask the questions included in each of the steps. At the same time, learners should plot the information on one of their partograph forms.

Case 2: The facilitator/teacher should read each step to the class and have learners plot the information on another of their partograph forms. The questions included in each step should be asked as they arise.

Case 3: The facilitator/teacher should read each step to the class and have learners plot the information on the third of their partograph forms. The questions should then be asked when the partograph is completed.

Throughout the exercise, the facilitator/teacher should ensure that learners have completed their partograph forms correctly.

The facilitator/teacher should provide learners with the three completed partograph forms from the Answer Key and have them compare these with the partograph forms they have completed. The facilitator/teacher should discuss and resolve any differences between the partographs completed by learners and those in the Answer Key.

RESOURCES

The following equipment or representations thereof:

- Partograph forms (three for each learner)
- Poster-size laminated partograph
- Exercise: Using the Partograph Answer Key
USING THE MODIFIED WHO PARTOGRAPH

The WHO partograph has been modified to make it simpler and easier to use. The latent phase has been removed and plotting on the partograph begins in the active phase when the cervix is 4 cm dilated. Record the following on the partograph:

**Patient information:** Fill out name, gravida, para, hospital number, date and time of admission, and time of ruptured membranes or time elapsed since rupture of membranes (if rupture occurred before charting on the partograph began).

Fetal heart rate: Record every half hour.

**Amniotic fluid:** Record the color of amniotic fluid at every vaginal examination:
- I: membranes intact;
- R: membranes ruptured;
- C: membranes ruptured, clear fluid;
- M: meconium-stained fluid;
- B: blood-stained fluid.

**Moulding:**
- 1: sutures apposed;
- 2: sutures overlapped but reducible;
- 3: sutures overlapped and not reducible.

**Cervical dilatation:** Assessed at every vaginal examination and marked with a cross (X). Begin plotting on the partograph at 4 cm.

**Alert line:** A line starts at 4 cm of cervical dilatation to the point of expected full dilatation at the rate of 1 cm per hour.

**Action line:** Parallel and 4 hours to the right of the alert line.
Descent assessed by abdominal palpation: Refers to the part of the head (divided into five parts) palpable above the symphysis pubis; recorded as a circle (O) at every abdominal examination. At 0/5, the sinciput (S) is at the level of the symphysis pubis.

Hours: Refers to the time elapsed since onset of active phase of labor (observed or extrapolated).

Time: Record actual time.

Contractions: Chart every half hour; count the number of contractions in a 10-minute time period, and their duration in seconds.

Oxytocin: Record the amount of oxytocin per volume IV fluids in drops per minute every 30 minutes when used.

Drugs given: Record any additional drugs given.

Pulse: Record every 30 minutes and mark with a dot (!).

Blood pressure: Record every 4 hours and mark with arrows.

Temperature: Record every 2 hours.

Protein, acetone and volume: Record when urine is passed.
CASE 1

Step 1
- Mrs. A. was admitted at 05.00 on 12.9.2003
- Membranes ruptured 04.00
- Gravida 3, Para 2+0
- Hospital number 7886
- On admission the fetal head was 4/5 palpable above the symphysis pubis and the cervix was 2 cm dilated

Q: What should be recorded on the partograph?

Note: Mrs. A. is not in active labor. Record only the details of her history, i.e., first four bullets, not the descent and cervical dilation.

Step 2
- 09.00:
  - The fetal head is 3/5 palpable above the symphysis pubis
  - The cervix is 5 cm dilated

Q: What should you now record on the partograph?

Note: Mrs. A. is now in the active phase of labor. Plot this and the following information on the partograph:

- 3 contractions in 10 minutes, each lasting 20–40 seconds
- Fetal heart rate (FHR) 120
- Membranes ruptured, amniotic fluid clear
- Sutures of the skull bones are apposed
- Blood pressure 120/70 mmHg
- Temperature 36.8°C
- Pulse 80/minute
- Urine output 200 mL; negative protein and acetone

Q: What steps should be taken?
Q: What advice should be given?
Q: What do you expect to find at 13.00?
Step 3

Plot the following information on the partograph:

09.30  FHR 120, Contractions 3/10 each 30 seconds, Pulse 80/minute
10.00  FHR 136, Contractions 3/10 each 30 seconds, Pulse 80/minute
10.30  FHR 140, Contractions 3/10 each 35 seconds, Pulse 88/minute
11.00  FHR 130, Contractions 3/10 each 40 seconds, Pulse 88/minute, Temperature 37°C
11.30  FHR 136, Contractions 4/10 each 40 seconds, Pulse 84/minute, Head is 2/5 palpable
12.00  FHR 140, Contractions 4/10 each 40 seconds, Pulse 88/minute
12.30  FHR 130, Contractions 4/10 each 45 seconds, Pulse 88/minute
13.00  FHR 140, Contractions 4/10 each 45 seconds, Pulse 90/minute, Temperature 37°C

- 13.00:
  - The fetal head is 0/5 palpable above the symphysis pubis
  - The cervix is fully dilated
  - Amniotic fluid clear
  - Sutures apposed
  - Blood pressure 100/70 mmHg
  - Urine output 150 mL; negative protein and acetone

Q: What steps should be taken?
Q: What advice should be given?
Q: What do you expect to happen next?

Step 4

Record the following information on the partograph:

- 13.20: Spontaneous birth of a live female infant weighing 2,850 g

Answer the following questions:

Q: How long was the active phase of the first stage of labor?
Q: How long was the second stage of labor?
CASE 2

Step 1

- Mrs. B. was admitted at 10.00 on 12.9.2003
- Membranes intact
- Gravida 1, Para 0+0
- Hospital number 1443

Record the information above on the partograph, together with the following details:

- The fetal head is 5/5 palpable above the symphysis pubis
- The cervix is 4 cm dilated
- 2 contractions in 10 minutes, each lasting less than 20 seconds
- FHR 140
- Membranes intact
- Blood pressure 100/70 mmHg
- Temperature 36.2°C
- Pulse 80/minute
- Urine output 400 mL; negative protein and acetone

Q: What is your diagnosis?
Q: What action will you take?

Step 2

- Plot the following information on the partograph:
  
  10.30 FHR 140, Contractions 2/10 each 15 sec, Pulse 90/minute
  11.00 FHR 136, Contractions 2/10 each 15 sec, Pulse 88/minute
  11.30 FHR 140, Contractions 2/10 each 20 sec, Pulse 84/minute
  12.00 FHR 136, Contractions 2/10 each 15 sec, Pulse 88/minute, Temperature 36.2°C, Membranes intact

- 12.00:
  - The fetal head is 5/5 palpable above the symphysis pubis
  - The cervix is 4 cm dilated, membranes intact

Q: What is your diagnosis?
Q: What action will you take?
Step 3

Plot the following information on the partograph:

12.30  FHR 136, Contractions 1/10 each 15 sec, Pulse 90/minute
13.00  FHR 140, Contractions 1/10 each 15 sec, Pulse 88/minute
13.30  FHR 130, Contractions 1/10 each 20 sec, Pulse 88/minute
14.00  FHR 140, Contractions 2/10 each 20 sec, Pulse 90/minute, Temperature 36.8°C, Blood pressure 100/70 mmHg

- 14:00:
  - The fetal head is 5/5 palpable above the symphysis pubis
  - Urine output 300 mL; negative protein and acetone

**Q:** What is your diagnosis?

**Q:** What will you do?

Plot the following information on the partograph:

- 14:00:
  - The cervix is 4 cm dilated, sutures apposed
  - Labor augmented with oxytocin 2.5 units in 500 mL IV fluid at 10 drops per minute (dpm)
  - Membranes artificially ruptured, clear fluid

Step 4

Plot the following information on the partograph:

- 14.30:
  - 2 contractions in 10 minutes, each lasting 30 seconds
  - Infusion rate increased to 20 dpm
  - FHR 140, Pulse 90/minute

- 15.00:
  - 3 contractions in 10 minutes, each lasting 30 seconds
  - Infusion rate increased to 30 dpm
  - FHR 140, Pulse 90/minute

- 15:30:
  - 3 contractions in 10 minutes, each lasting 30 seconds
  - Infusion rate increased to 40 dpm
  - FHR 140, Pulse 88/minute
16.00:
- Fetal head 2/5 palpable above the symphysis pubis
- Cervix 6 cm dilated; sutures apposed
- 3 contractions in 10 minutes, each lasting 30 seconds
- Infusion rate increased to 50 dpm
- FHR 144, Pulse 92/minute
- Amniotic fluid clear

16.30:
- 3 contractions in 10 minutes, each lasting 45 seconds
- FHR 140, Pulse 90/minute
- Infusion remains at 50 dpm

Q: What steps would you take?

Step 5
- 17.00 FHR 138, Pulse 92/minute, Contractions 3/10 each 40 sec, Maintain at 50 dpm
- 17.30 FHR 140, Pulse 94/minute, Contractions 3/10 each 45 sec, Maintain at 50 dpm
- 18.00 FHR 140, Pulse 96/minute, Contractions 4/10 each 50 sec, Maintain at 50 dpm
- 18.30 FHR 144, Pulse 94/minute, Contractions 4/10 each 50 sec, Maintain at 50 dpm

Step 6
- Plot the following information on the partograph:
  - 19.00:
    - Fetal head 0/5 palpable above the symphysis pubis
    - 4 contractions in 10 minutes, each lasting 50 seconds
    - FHR 144, Pulse 90/minute
    - Cervix fully dilated

Step 7
- Record the following information on the partograph:
  - 19.30:
    - 4 contractions in 10 minutes, each lasting 50 seconds
    - FHR 142, Pulse 100/minute
  - 20.00:
    - 4 contractions in 10 minutes, each lasting 50 seconds
- FHR 146, Pulse 110/minute
- 20.10:
  - Spontaneous birth of a live male infant weighing 2,654 g

Answer the following questions:

Q: How long was the active phase of the first stage of labor?
Q: How long was the second stage of labor?
Q: Why was labor augmented?
CASE 3

Step 1

- Mrs. C. was admitted at 10.00 on 12.9.2003
- Membranes ruptured 09.00
- Gravida 4, Para 3+0
- Hospital number 6639

Record the information above on the partograph, together with the following details:

- Fetal head 3/5 palpable above the symphysis pubis
- Cervix 4 cm dilated
- 3 contractions in 10 minutes, each lasting 30 seconds
- FHR 140
- Amniotic fluid clear
- Sutures apposed
- Blood pressure 120/70 mmHg
- Temperature 36.8°C
- Pulse 80/minute
- Urine output 200 mL; negative protein and acetone

Step 2

Plot the following information in the partograph:

10.30 FHR 130, Contractions 3/10 each 35 sec, Pulse 80/minute
11.00 FHR 136, Contractions 3/10 each 40 sec, Pulse 90/minute
11.30 FHR 140, Contractions 3/10 each 40 sec, Pulse 88/minute
12.00 FHR 140, Contractions 3/10 each 40 sec, Pulse 90/minute, Temperature 37°C, Head 3/5 palpable
12.30 FHR 130, Contractions 3/10 each 40 sec, Pulse 90/minute
13.00 FHR 130, Contractions 3/10 each 45 sec, Pulse 88/minute
13.30 FHR 120, Contractions 3/10 each 45 sec, Pulse 88/minute
14.00 FHR 130, Contractions 4/10 each 45 sec, Pulse 90/minute, Temperature 37°C, Blood pressure 100/70 mmHg

14:00:
- Fetal head 3/5 palpable above the symphysis pubis
- Cervix 6 cm dilated, amniotic fluid clear
- Sutures overlapped but reducible
Step 3

14.30  FHR 120, Contractions 4/10 each 40 sec, Pulse 90/minute, Clear fluid
15.00  FHR 120, Contractions 4/10 each 40 sec, Pulse 88/minute, Blood-stained fluid
15.30  FHR 100, Contractions 4/10 each 45 sec, Pulse 100/minute
16.00  FHR 90, Contractions 4/10 each 50 sec, Pulse 100/minute, Temperature 37°C
16.30  FHR 96, Contractions 4/10 each 50 sec, Pulse 100/minute
17.00  FHR 90, Contractions 4/10 each 50 sec, Pulse 110/minute

- 17:00:
  - Fetal head 3/5 palpable above the symphysis pubis
  - Cervix 6 cm dilated
  - Amniotic fluid meconium stained
  - Sutures overlapped and not reducible
  - Urine output 100 mL; protein negative, acetone 1+

Step 4

Record the following information on the partograph:

- Cesarean section at 17.30, live female infant with poor respiratory effort and weighing 4,850 g

Answer the following questions:

Q: What is the final diagnosis?

Q: What action was indicated at 14.00, and why?

Q: What action was indicated at 15.00, and why?

Q: At 17.00, a decision was taken to do a cesarean section, and this was rapidly done. Was this a correct action?

Q: What problems may be expected in the newborn?
KNOWLEDGE ASSESSMENT: MANAGING LABOR USING THE PARTOGRAPH

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. If a woman is admitted during the first stage/active phase of labor, cervical dilatation is plotted on the partograph:
   a. To the left of the alert line
   b. To the right of the alert line
   c. On the alert line
   d. On the action line

2. The characteristics of amniotic fluid that is not included on the partograph is:
   a. Clear
   b. Foul-smelling
   c. Blood stained
   d. Meconium-stained

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

3. The fetal heart should be recorded on the partograph once per hour.  
   _____

4. Frequency of contractions is calculated by palpating contractions for 1 full minute.  
   _____
Session Objectives

- Discuss the importance of using a partograph
- Understand how to fill in a partograph
- Understand how to use a partograph in decision-making

Usefulness of the Partograph

- Assessment of fetal well-being
- Assessment of maternal well-being
- Assessment of progress of labor

Measuring Fetal Well-Being during Labor

- Fetal heart rates and pattern
- Degree of molding, caput
- Color of amniotic fluid
Measuring Maternal Well-Being during Labor

- Pulse, temperature, blood pressure, respiration
- Urine output, ketones, protein

Measuring Progress of Labor

- Cervical dilatation
- Descent of presenting part
- Contractions
  - Duration
  - Frequency
- Alert and action lines

Using the Partograph

- Patient information: Name, gravida, para, hospital number, date and time of admission, and time of ruptured membranes
- Fetal heart rate: Record every half hour
- Amniotic fluid: Record the color at every vaginal examination:
  - I: membranes intact
  - C: membranes ruptured, clear fluid
  - M: meconium-stained fluid
  - B: blood-stained fluid

Using the Partograph (cont.)

- Molding:
  - 1: sutures apposed
  - 2: sutures overlapped but reducible
  - 3: sutures overlapped and not reducible
- Cervical dilatation: Assess at every vaginal examination, mark with cross (X)
- Alert line: Line starts at 4 cm of cervical dilatation to the point of expected full dilatation at the rate of 1 cm per hour
- Action line: Parallel and 4 hours to the right of the alert line
Using the Partograph (Descent)

- Descent assessed by abdominal palpation: Part of head (divided into 5 parts) palpable above the symphysis pubis; recorded as a circle (O) at every vaginal examination. At 0/5, the sinciput (S) is at the level of the symphysis pubis

Using the Partograph (Timing)

- Hours: Time elapsed since onset of active phase of labor (observed or extrapolated)
- Time: Record actual time
- Contractions: Chart every half hour; palpate the number of contractions in 10 minutes and their duration in seconds
  - Less than 20 seconds:
  - Between 20 and 40 seconds:
  - More than 40 seconds:

Using the Partograph (Drugs)

- Oxytocin: Record amount per volume IV fluids in drops/min. every 30 min. when used
- Drugs given: Record any additional drugs given

Using the Partograph (Vital Signs and Urine)

- Temperature: Record every 2 hours
- Pulse: Record every 30 minutes and mark with a dot (•)
- Blood pressure: Record every 4 hours and mark with arrows
- Protein, acetone and volume: Record every time urine is passed
The Modified WHO Partograph

Sample Partograph for Normal Labor

Partograph Showing Obstructed Labor

Partograph Showing Inadequate Uterine Contractions Corrected with Oxytocin (Oxytocin should have been started 2 hours earlier—Hour 2)
Now let’s practice use of the partograph with simulated situations
## SUPPLEMENTARY MODULE 9.2: BEST PRACTICES IN CARE FOR ASSISTED BREECH BIRTH—SESSION PLAN

### MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Practices in Care for Assisted Breech Birth</td>
<td>90 min</td>
</tr>
</tbody>
</table>

### SESSION OBJECTIVES

**By the end of this session, participants will be able to:**
- Identify best practices for managing breech birth:
  - Procedures to assist in delivery
  - Post-procedure tasks

### Methods and Activities

<table>
<thead>
<tr>
<th>Illustrated presentation/discussion: Best practices in care during breech birth (30 min)</th>
<th>Materials/Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use questions and discussion throughout presentation as indicated on slides.</td>
<td>Boxlight projector</td>
</tr>
<tr>
<td>Be sure to cover the following topical areas:</td>
<td>PowerPoint presentation</td>
</tr>
<tr>
<td>- Indications for vaginal breech birth</td>
<td>OR</td>
</tr>
<tr>
<td>- Breech presentations</td>
<td>Overhead projector with transparencies (Handouts of presentations if no electricity)</td>
</tr>
<tr>
<td>- Overall tasks</td>
<td>Copy of Skills Practice Session</td>
</tr>
<tr>
<td>- Procedure: Delivery of buttocks and legs</td>
<td>Copies of Learning Guide and Checklist for Assisting a Breech Birth</td>
</tr>
<tr>
<td>- Procedure: If legs to not deliver spontaneously</td>
<td>Childbirth simulator</td>
</tr>
<tr>
<td>- Procedure: Normal delivery of the arms</td>
<td>Syringes and vials</td>
</tr>
<tr>
<td>- Procedure: Loveset Maneuver</td>
<td>High-level disinfected or surgical gloves</td>
</tr>
<tr>
<td>- Procedure: If baby cannot be turned to deliver anterior arm first</td>
<td>Personal protective barriers</td>
</tr>
<tr>
<td>- Procedure: Delivery of the head</td>
<td>Delivery kit/pack</td>
</tr>
<tr>
<td>- Procedure: If head is entrapped</td>
<td>0.5% chlorine solution and receptacle for decontamination</td>
</tr>
<tr>
<td>- Post-procedure tasks</td>
<td>Leak-proof container or plastic bag</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skills demonstration and practice: Assisting a breech birth (70 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstration: (20 min)</td>
</tr>
<tr>
<td>Distributed learning guides and demonstrate:</td>
</tr>
<tr>
<td>- Assisting a breech birth</td>
</tr>
<tr>
<td>Practice: (50 min)</td>
</tr>
<tr>
<td>Divide participants into three groups to practice each skill with a model. One practices while others in group follow with learning guide. Participants rotate within small group until all have practiced. They then rotate to another skill station.</td>
</tr>
</tbody>
</table>

NOTE: The facilitator/teacher may choose to include demonstration with the illustrated presentation/discussion, if model and other equipment are available in the classroom.
### SKILLS PRACTICE SESSION: ASSISTING A BREECH BIRTH

<table>
<thead>
<tr>
<th>PURPOSE</th>
<th>INSTRUCTIONS</th>
<th>RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The purpose of this activity is to enable learners to practice management of breech birth and to achieve competency in the skills required.</td>
<td>This activity should be conducted in a simulated setting. (Most faculty will already be skilled in normal care, so this practice is to ensure that new evidence-based practices are incorporated into teaching and practice.) Learners should review Learning Guide for: Assisting a Breech Birth before beginning the activity. The facilitator/teacher should demonstrate the steps/tasks in each learning guide one at a time. Under the guidance of the teacher, learners should then work in pairs and practice the steps/tasks in each individual Learning Guide and observe each other’s performance; while one learner performs the skill, the second learner should use the relevant section of each Learning Guide to observe performance. Learners should then reverse roles. Learners should be able to perform the steps/tasks relevant each skill before skills competency is assessed in a simulated setting.</td>
<td>• Childbirth simulator with baby and placenta • Syringes and vial • High-level disinfected or surgical gloves • Personal protective barriers • Delivery kit/pack • 0.5% chlorine solution and receptacle for decontamination • Leak-proof container or plastic bag</td>
</tr>
</tbody>
</table>

Learning Guide: Assisting a Breech Birth

Learning Guide: Assisting a Breech Birth

Checklist: Assisting at Breech Birth
KNOWLEDGE ASSESSMENT: ASSISTING A BREECH BIRTH

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Indications for a vaginal breech birth include all of the following except:
   a. Mother at term
   b. Frank or complete breech presentation
   c. Cervix completely dilated
   d. No evidence of cephalopelvic disproportion

2. When delivering the buttocks and legs:
   a. When the buttocks are visible at the vagina tell the woman she may push
   b. Once buttocks are delivered, hold baby by flanks or abdomen
   c. Once buttocks are delivered, gently pull on baby so that body descends and arms can be delivered
   d. b) and c)

3. When the baby’s head is delivering, do all of the following except:
   a. Lay baby face down with length of body over your arm and hand
   b. Place 1st and 3rd fingers on baby’s cheekbone and 2nd finger in baby’s mouth to pull jaw down and flex head
   c. Keep baby’s head extended away from chest as head delivers
   d. You may pull gently to deliver baby’s head

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

4. A partograph is not an appropriate tool when caring for a mother with a breech baby.  
   ____

5. A vacuum extractor is not an appropriate tool when caring for a mother with a breech birth.  
   ____

6. If the legs do not deliver spontaneously, pull gently on the baby so that buttocks and legs descend.  
   ____
Best Practices in Care for Assisted Breech Birth

Session Objectives

- To identify best practices for managing breech birth:
  - Procedures to assist in delivery
  - Post-procedure tasks

Indications for Vaginal Breech Birth

- Frank or complete breech presentation
- Cervix completely dilated
- No evidence of cephalopelvic disproportion

Breech Presentations

- Frank
- Complete
Overall Tasks

- Plot all parameters on partograph during labor
- Start an IV infusion
- Provide emotional support and encouragement
- Perform all maneuvers gently and without force

Procedure: Delivery of Buttocks and Legs

- Once buttocks are in vagina, tell woman she may push.
- Perform episiotomy if perineum is tight.
- Allow buttocks to deliver until shoulder blades are seen.
- Gently hold buttocks in one hand, but do not pull. Do not hold by flanks or abdomen as this may cause kidney or liver damage.

Holding the Baby at the Hips

Procedure: If Legs Do Not Deliver Spontaneously

- Deliver one leg at a time
- Push behind the knee to bend the leg
- Grasp the ankle and deliver the foot and leg
- Repeat for other leg
- DO NOT PULL THE BABY WHILE THE LEGS ARE BEING DELIVERED!
Procedure: Normal Delivery of the Arms

- If the arms are felt on the chest:
  - Allow arms to disengage spontaneously
  - After delivery of first arm, lift buttocks toward mother’s abdomen
  - If arm does not deliver spontaneously, place one or two fingers in elbow and bend arm, bringing down over baby’s face

Procedure: If Arms Are Stretched above the Head: Loveset Maneuver

- Hold baby by hips and turn half circle
- Keep back uppermost while downward traction brings posterior arm into anterior position
- Flex first (now anterior) arm as on previous slide
- Deliver second arm by half circle turn, keeping back uppermost and repeat to deliver other arm

Procedure: If the Baby’s Body Cannot Be Turned to Deliver Anterior Arm First

- Lift baby up by ankles.
- Move baby’s chest towards woman’s inner leg. The shoulder that is posterior should deliver.
- Deliver the arm and hand.
- Lay the baby back down by ankles so that anterior shoulder now delivers with arm and hand.

Procedure: Delivery of the Head

As Shown on Next Slide:

- Lay baby face down with length of body over your arm and hand
- Place 1st and 3rd fingers on baby’s cheekbone and 2nd finger in baby’s mouth to pull jaw down and flex head
- Use other hand to grasp baby’s shoulders
- With 2 fingers of this hand, flex baby’s head toward chest while pulling on jaw
- Pull gently to deliver head
- NOTE: Ask an assistant to push above the woman’s pubic bone as the head delivers to help keep head flexed
Procedure: Delivery of the Head

Procedure: If Head Is Entrapped

- Catheterize bladder
- Have an assistant hold the baby while you apply Piper forceps
- Wrap baby in cloth or towel and hold baby up
- Use forceps to flex and deliver the baby’s head
- Apply firm pressure above the woman’s pubic bone to flex baby’s head

Post-Procedure Tasks

- Suction baby’s mouth and nose if necessary
- Clamp and cut cord
- Keep baby warm and dry
- Perform active management of the third stage of labor
- Examine the woman carefully for tears of the vagina, perineum and cervix, and repair episiotomy
# MODULE 10: BEST PRACTICES IN VACUUM EXTRACTOR-ASSISTED BIRTH—SESSION PLAN

## MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Practices in Vacuum Extractor-Assisted Birth</td>
<td>120 min</td>
</tr>
</tbody>
</table>

### SESSION OBJECTIVES

**By the end of this session, participants will be able to:**

- State implications and contraindications for use of the vacuum extractor
- Describe complications associated with use of vacuum extractor
- Compare advantages and disadvantages of vacuum extractor versus forceps
- Demonstrate the steps in vacuum extractor birth
- Describe the care of a vacuum extractor, tubing and pump after use

### Methods and Activities

<table>
<thead>
<tr>
<th>Methods and Activities</th>
<th>Materials/Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction of topic and discussion of participants’ previous experience with use of vacuum extractor for assisting birth (10 min)</td>
<td>• Boxlight projector</td>
</tr>
<tr>
<td>• Use questioning of group to draw out experience of participants.</td>
<td>• PowerPoint presentation</td>
</tr>
<tr>
<td>• Show pieces of vacuum extractor equipment.</td>
<td>• Overhead projector with transparencies (Handouts of presentations if no electricity)</td>
</tr>
<tr>
<td>Illustrated presentation/discussion: Best practices in vacuum extractor-assisted birth (30 min)</td>
<td>• Vacuum extractor with cups</td>
</tr>
<tr>
<td>• Intersperse presentation with questions that illicit knowledge of participants:</td>
<td>• Childbirth simulator</td>
</tr>
<tr>
<td>o Indications for VE</td>
<td>• Drapes for model</td>
</tr>
<tr>
<td>o Conditions for use of VE</td>
<td>• Newborn model with head that is soft enough to allow suction to develop with VE cup</td>
</tr>
<tr>
<td>o Contraindications for use of VE</td>
<td>• Delivery kit</td>
</tr>
<tr>
<td>o Application of the cup</td>
<td>• DeLee mucus trap</td>
</tr>
<tr>
<td>o Comparison of VE and forceps</td>
<td>• Syringe for simulated oxytocin administration</td>
</tr>
<tr>
<td>o Possible fetal and maternal complications</td>
<td>• Placenta pan</td>
</tr>
<tr>
<td>• Discuss issues that arise during presentation and questioning.</td>
<td>• Towels/blanket</td>
</tr>
<tr>
<td>Demonstration and skills practice session: Vacuum extractor-assisted birth (80 min)</td>
<td>• IP materials: gown, goggles, gloves, sharps container, buckets for chlorine solution, cloth for cleaning</td>
</tr>
<tr>
<td>• Remind learners about pieces of vacuum extractor equipment.</td>
<td></td>
</tr>
<tr>
<td>• Using a model, demonstrate correct use of vacuum extractor for assisting birth, with learners following with learning guide.</td>
<td></td>
</tr>
<tr>
<td>• Demonstrate cleaning and care of vacuum extractor equipment.</td>
<td></td>
</tr>
<tr>
<td>• Allow learners to practice on models using learning guide.</td>
<td></td>
</tr>
<tr>
<td>• When learner feels confident of competence, observe return demonstration using checklist.</td>
<td></td>
</tr>
<tr>
<td>Allow clinical practice with clients after learner is competent on model.</td>
<td></td>
</tr>
</tbody>
</table>
KNOWLEDGE ASSESSMENT: VACUUM EXTRACTOR-ASSISTED BIRTH

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Indications for use of a vacuum extractor to assist a birth include all of the following except:
   a. Maternal condition that makes voluntary pushing efforts contraindicated or impossible
   b. Need to reduce the length of first stage
   c. Abruptio placentae when 2nd stage is progressing rapidly and C-section is impossible

2. Conditions for use of the vacuum extractor include all of the following except:
   a. Vertex presentation
   b. Term fetus
   c. Head no more than 3/5 above symphysis pubis
   d. Cervix fully dilated

3. Contraindications to the use of a vacuum extractor include:
   a. Inability to achieve a proper suction
   b. Uncertainty concerning fetal position
   c. Suspicion of CPD
   d. Prior failed forceps
   e. a), b) and d)
   f. All of the above

4. Do not continue to pull the vacuum extractor if:
   a. The head does not advance with each pull
   b. The fetus is undelivered after 15 minutes
   c. The cup slips off of the head
   d. All of the above
Session Objectives

1) State indications and contraindications for the use of the vacuum extractor.
2) State complications associated with vacuum extractor use for mother and baby.
3) Compare advantages and disadvantages of vacuum extractor versus forceps.
4) Compare advantages and disadvantages of soft cups and metal cups.

During clinical practice session:
- Demonstrate the steps for using the vacuum extractor using fetal and pelvis models and a skills checklist, including identification of the flexion point.
- Describe the care of a vacuum extractor, tubing and pump after use.

What is a vacuum extractor?

Clinical and Technical Principles
Correct Application of the Cup

Flexing Median Application
The center of the vacuum cup should be placed over the flexion point with the sagittal suture in the midline.

Location of the Flexion Point

Placement of the Vacuum Cup

Mechanism of Labor
- Flexion
- Synclitism
- Descent
- Internal Rotation
- Extension
- Restitution
**STATION**

Station is the relationship of the lowermost part of the presenting part to an imaginary line drawn between the ischial spines.

**ENGAGEMENT**

Engagement is defined as the point when the widest diameter of the presenting part (in a cephalic occipital presentation, the biparietal diameter) has passed through the pelvic inlet. In most circumstances, when the head is engaged, the lowermost part of the presenting part is at the level of ischial spines, or 0 station.

**FLEXION**

When flexion is complete, the shortest anteroposterior diameter, the suboccipitobregmatic (dotted line), is passing through the pelvic inlet. The solid dark line indicates the mentoccipital diameter.

**SYNCLITISM**

Courtesy of: Williams Obstetrics.
ACOG Forceps Classification
(Often applied to vacuum-assisted births)

Outlet:
1. Scalp is visible at the introitus without separating the labia.
2. Fetal skull has reached the pelvic floor.
3. Sagittal suture is in anteroposterior diameter or right or left occiput anterior or posterior position.
4. Fetal head is at or on the perineum.
5. Rotation does not exceed 45 degrees.

ACOG Forceps Classification

Low:
1. Leading point of fetal skull is at station > +2 cm and not on the pelvic floor.
2. Rotation is 45 degrees or less (left or right occiput anterior to occiput anterior, or left or right occiput posterior to occiput posterior.
3. Rotation is greater than 45 degrees.

Mid-pelvic:
1. Station is above +2 station but head is engaged.

Pulling Downward

Pulling Horizontal
### Metal Cups

<table>
<thead>
<tr>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
</tr>
</thead>
</table>
| ▪ Posterior metal cups are effective for:  
  ▪ Posterior position  
  ▪ Large baby  
  ▪ Significant caput  
  ▪ Deflexed head  
| ▪ More difficult to apply  
| ▪ More uncomfortable  
| ▪ Higher incidence of fetal scalp injuries  
| ▪ Can be autoclaved  
| ▪ Already available in many locations where newer cups cannot be purchased  
| ▪ Still used and available  

### Disadvantages of Soft Cups

- Easier assembly and application
- Faster from application to effective traction
- Less pronounced chignon
- Fewer superficial scalp injuries
- Less retinal hemorrhage
- Higher rate of delivery failure
Mityvac Vacuum Pump

- No electricity required
- Trigger vacuum release for complete control throughout delivery by midwife or assistant
- Precision gauge color coded, calibrated in cm and inches of Hg
- Minigrip contoured handle
- May be autoclaved or gas sterilized

Care of Vacuum Extractor Pump, Cup and Tubing

- Pistol style pump is cleaned with a damp cloth (if pump is contaminated, wipe with 0.5% chlorine, then immediately with clear water).
- When fluid trap is used, it prevents fluid from being sucked into pump.
- If fluid is in pump, immerse in distilled water, pump until water expelled is clear, squeeze handles to air dry; do not leave fluid in the pump.
- Do not use soap or other cleaning solutions; they affect operation of pump.
- Cup and tubing should be soaked in 0.5% chlorine for 10 minutes, washed with soapy water and rinsed with clean water. Cup should be autoclaved. Tubing should be soaked for another 20 minutes in 0.5% chlorine, rinsed with clean water and air dried.

Complications – Newborn Caput

- Results from pressure applied to fetal scalp from:
  - Dilating cervix
  - Pelvic soft tissue
  - Vacuum
- Caput occurs at vacuum cup application site; also called chignon
- Interstitial hemorrhages and fluid accumulate to form caput; longer 2nd stage and longer procedure leads to more accumulation
- Makes tissue more vulnerable to abrasion, laceration, hematoma
- Resolves spontaneously in a few days

Complications – Newborn Cephalhematoma

- Cephalhematoma:
  - Vessel ruptures between periosteum and outer edge of fetal skull
  - Hemorrhage is self-limited since periosteum is attached to edges of cranial plates
  - Most common over parietal bone; does not cross suture lines
  - Takes 4–6 weeks to resolve
  - Mean incidence 6% with VE deliveries
Cephalhematoma

- May calcify and cause deformity (rare)
- Increase in bilirubin has been reported
- Not associated with long-term sequelae
- A vacuum chignon located over one of the parietal bones can be mistaken for cephalhematoma
- Over-diagnosed, as much as 4 fold
- Same incidence whether vacuum is intermittent or continuous
- Increased with higher station, increasing degree of asynclitism, greater time from application to delivery
- No increase with spontaneous rotation

Complications – Newborn Retinal Hemorrhage

Retinal hemorrhage:

- Retinal hemorrhage less when:
  - 2nd stage less than 1 hour
  - C/S
  - Breach birth
  - Forceps
- May result from changes in intracranial venous pressure
- Not increased with non-reassuring fetal heart rate
- Rate with vacuum higher than normal birth
- With vacuum, hemorrhage more common in right eye
- Transient sign
- No long term consequences
- Pathophysiology unknown

Complications – Newborn Scalp Injuries

Scalp injuries:

- Bruising and swelling are common
- Cup disengagement contributes to abrasions, bruising, bleeding, swelling
- Incidence is greater if:
  - Vacuum procedure lasts longer than 10 minutes
  - 2nd stage is longer than 2 hours
  - Cup application is paramedian
- With metal cup, twisting causes cookie-cutter or semi-circumferential laceration

Complications – Newborn Intracranial Hemorrhage

Intracranial hemorrhage:

- Occurs in 1 of 860 VE deliveries, 1 of 1,900 spontaneous deliveries
- Higher when delivery is by vacuum, forceps or C/S as compared to normal vaginal delivery
- If C/S is before labor starts, incidence is not increased, suggesting that cause is related to abnormal labor rather than mode of delivery
- Rate markedly decreased with soft plastic cups
Complications – Newborn Subgaleal (Subaponeurotic) Hemorrhage

- Collection of blood under scalp
- Potential space can accommodate half or more of the blood volume of the neonate
- May cause coagulopathy, difficult to control
- Mortality almost 1 in 4
- Risk factors: use of vacuum, primipara, macrosomia, prolonged labor, CPD, prematurity, male gender, birth in Africa
- Occurs in approximately 1 in 1,000 VE deliveries

Subgaleal Hemorrhage (cont.)

- More likely to occur when vacuum applied over anterior fontanelle
- Watch for early signs of shock such as pallor, hypotonia, tachycardia, tachypnea, increasing head circumference
- Late signs include anemia and boggy, ballotable cranium
- Do hourly head circumference for 8 hours
- Draw a baseline umbilical cord hematocrit

Complications – Maternal

Perineal, vaginal and cervical lacerations are more likely with:

- Nullipara
- Use of forceps
- Use of episiotomy
- Posterior presentation
- Prolonged delivery time
- Increased birth weight
- Midpelvic station
- Greater than 45 degrees of rotation

Advantages of Vacuum Compared to Forceps – Baby and Delivery Factors

- Less force to fetal head
- Allows autorotation of fetal head
- Can be used to correct deflection and asynclitism
- Augments pushing and assists vaginal delivery
Advantages of Vacuum Compared to Forceps – Maternal and Provider Factors

- Fewer reproductive tract injuries, less maternal genital trauma including anal sphincter tears
- Less maternal discomfort during and after delivery
- Less anesthesia is necessary
- Less maternal blood loss
- Easier to learn

Advantages of Forceps Compared to Vacuum

- No contractions are needed
- Easier to apply with caput
- Used with breech presentation
- Pre-term use less controversial
- Less difficult to apply to deflexed head
- Rotation of fetal head accepted practice
- Less incidence of shoulder dystocia

Effectiveness

- Vacuum failure rates range from 2–27%
- Metal cups have slightly higher success rates than plastic cups, but also higher rates of adverse outcomes
- Greater failure rate of vacuum versus forceps when the position was posterior and silastic cup was used
- Highest VE success rate with a non-metal cup was with the M-cup, which has a delivery rate as high as forceps

Question ??

What are the primary indications for use of the vacuum extractor?
**Indications**

1. **Non-reassuring fetal heart rate**, the most important indication, may include bradycardia, tachycardia, repetitive deep variables or late decelerations.

2. **Maternal exhaustion** is an indication when the mother is unable to complete second stage spontaneously because of inadequate expulsive efforts or ineffective bearing down.

**Requirements for Use of a Vacuum Extractor**

- Vertex presentation
- Term fetus
- Cervix fully dilated
- Head at least 0 station or no more than 2/5 above symphysis pubis
- Ruptured membranes
- Adequate pelvis – no clinical evidence of CPD (no severe molding)

**Contraindications to Use of Vacuum Extractor**

- Incompetent or inexperienced provider
- Severe caput
- Prematurity (less than 37 weeks)
- Malpresentation (breech, footling, face, brow, shoulder, transverse)
- Inability to achieve proper suction
- Uncertainty concerning fetal position
- Suspicion of CPD
- Known or suspected fetal coagulation defect
- Prior failed forceps
- OP position of fetus and no posterior cup available

**Do Not Continue to Pull If:**

- The head does not advance with each pull
- The fetus is undelivered after three contractions without reducing pressure between contractions
- The fetus is undelivered after 20 minutes when pressure is reduced between contractions
- The cup comes off the head and scalp laceration or abrasion is seen.
- The cup comes off the head twice
References


MODULE 11: BEST PRACTICES IN IMMEDIATE CARE OF THE NEWBORN—SESSION PLAN

MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Practices in Immediate Care of the Newborn</td>
<td>105 min (skills can be integrated into Labor and Childbirth skills session)</td>
</tr>
</tbody>
</table>

SESSION OBJECTIVES

NOTE: In general, this session will be taught as part of Normal Labor and Birth.

By the end of this session, participants will be able to:

- Define essential elements of early newborn care
- Discuss best practices for promoting newborn health
- Use relevant data and information to develop appropriate essential newborn recommendations

<table>
<thead>
<tr>
<th>Methods and Activities</th>
<th>Materials/Resources</th>
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<tbody>
<tr>
<td>Illustrated presentation/discussion: Best practices in normal newborn care (45 min)</td>
<td>Boxlight projector</td>
</tr>
<tr>
<td>- Use questions and discussion throughout presentation as indicated on slides.</td>
<td>PowerPoint presentation OR</td>
</tr>
<tr>
<td>- Respond to questions as they arise during presentation.</td>
<td>Overhead projector with transparencies (Handouts of presentations if no electricity)</td>
</tr>
<tr>
<td>- Include role play as indicated in PowerPoint.</td>
<td>Skills Practice Session instruction on AMTSL, Birth Assisted with Vacuum Extraction, Episiotomy and Repair, and Repair of First- and Second-degree Lacerations</td>
</tr>
<tr>
<td>- Be sure to include:</td>
<td>Learning Guide and Checklist for Assisting Normal Birth</td>
</tr>
<tr>
<td>o Global situation of newborn deaths</td>
<td>Newborn model</td>
</tr>
<tr>
<td>o Main causes of newborn mortality</td>
<td>Thermometer</td>
</tr>
<tr>
<td>o Main factors associated with newborn death</td>
<td>High-level disinfected or surgical gloves</td>
</tr>
<tr>
<td>o Essential care for a newborn immediately after birth</td>
<td>Personal protective barriers</td>
</tr>
<tr>
<td>o Key principles and practices of cord care</td>
<td>Blanket for wrapping newborn</td>
</tr>
<tr>
<td>o Thermal protection</td>
<td>0.5% chlorine solution and receptacle for decontamination</td>
</tr>
<tr>
<td>o Early and exclusive breastfeeding</td>
<td>Leak-proof container or plastic bag</td>
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<tr>
<td>o Breathing initiation and resuscitation</td>
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<tr>
<td>o Eye care</td>
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<td>o Immunizations</td>
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<tr>
<td>o Newborn danger signs</td>
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</table>

Skills demonstration and practice: Normal newborn care (60 min)

- Teacher/facilitator will demonstrate normal newborn care as part of IMMEDIATE NEWBORN CARE and learners will practice skills with coaching by peers and by teacher/facilitator as described in Skills Practice Session: Normal Labor and Childbirth, Active Management of Third Stage of Labor, Birth Assisted with Vacuum Extraction, Episiotomy and Repair, and Repair of First- and Second-degree Lacerations. The teacher/facilitator will focus on the Learning Guide and Checklist for Assisting with Normal Birth for this part of the session.
- The Learning Guide and Checklist for Newborn Assessment can be used as a supplement and/or for reference.
ROLE PLAY: PARENT EDUCATION AND SUPPORT FOR THE CARE OF THE NEWBORN

The purpose of the role play is to provide an opportunity for participants to understand the importance of individualized advice and counseling for parents of a newborn. The emphasis in the role play is on providing health messages in a way that is nonjudgmental, supportive and encouraging to the parents, while demonstrating good communication skills. There are directions for the facilitator/teacher, together with discussion questions to facilitate discussion after the role play. There is also an answer key. It is important for the facilitator/teacher to become familiar with the answer key before conducting the role play. Although the key contains “likely” responses, other responses provided by participants may be equally acceptable.

DIRECTIONS

The facilitator/teacher will select two participants to perform the following roles: health care provider and mother of newborn. The two participants taking part in the role play should take a few minutes to prepare for the activity by reading the background information provided below. The remaining participants, who will observe the role play, should at the same time read the background information.

The purpose of the role play is to provide an opportunity for participants to develop/practice effective interpersonal skills.

PARTICIPANT ROLES

Health care provider: The health care provider is experienced in the care of newborn babies and has good interpersonal communication skills.

Mother: The mother is from a village in a poor agricultural area; she is 27 years old and illiterate. This is her fourth baby.

SITUATION

Mrs. B. gave birth to a healthy term baby 10 hours ago. The health care provider has noticed that the clothing Mrs. B. has for her baby is not clean. She has also noticed that Mrs. B. has wrapped a piece of unclean cloth tightly around the baby’s abdomen, covering the cord stump.

FOCUS OF THE ROLE PLAY

The focus of the role play is the interpersonal interaction between the health care provider and the mother and the appropriateness of the health messages discussed with her.

DISCUSSION QUESTIONS

1. How did the health care provider demonstrate respect and kindness during her interaction with Mrs. B.?
2. What key health messages related to hygiene and cord care did the health care provider discuss with Mrs. B.?

3. What did the health care provider do to ensure that Mrs. B. understood the health messages?
KNOWLEDGE ASSESSMENT: IMMEDIATE CARE OF THE NEWBORN

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. The main causes of newborn mortality are:
   a. Asphyxia, pneumonia and tetanus
   b. Tetanus, diarrhea and preterm birth
   c. Infections, asphyxia and preterm birth
   d. Diarrhea, tetanus and congenital anomalies

2. Routine immunizations at birth include:
   a. BCG (for tuberculosis) and oral polio
   b. Hepatitis B (HBV) and BCG
   c. Tetanus and whooping cough
   d. a) and b)
   e. All of the above

3. Infants at risk of needing resuscitation include:
   a. Infants who showed fetal distress during labor
   b. Infants born in breech presentation
   c. Infants with thick meconium
   d. Every infant

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

4. Two-thirds of newborn deaths from infection are the result of lack of hygiene during the birth and postpartum and lack of skilled attendant at birth. ____

5. After cutting and cleaning, the umbilical cord should be covered with a clean cloth that is kept dry and is changed once each day (or more often if it becomes soiled). ____

6. Appropriate thermal protection of the newborn requires that the baby be bathed within 6 hours of birth in water that is 36.5–38.0°C. ____

7. Erythromycin eye drops are more effective than silver nitrate or povidone-iodine in preventing newborn eye infections. ____
Session Objective

- Define essential elements of early newborn care
- Discuss best practices for promoting newborn health
- Use relevant data and information to develop appropriate recommendations for essential newborn care

Newborn Deaths

Every year:
- 8.1 million infant deaths
- 4 million neonatal deaths
  - 40% of all under-five mortality
- Eight neonatal deaths every minute
- 4 million stillbirths
- Under-five and under-one mortality has declined significantly – but NMR has declined little

Question ??

- What are the main causes of newborn mortality?
Causes of Newborn Death

- Tetanus: 7%
- Sepsis/pneumonia: 27%
- Other: 3%
- Infection: 36%
- Congenital: 14%
- Asphyxia: 7%
- Sepsis: 11%
- Diarrhoea: 3%
- Premature: 28%

Risk by Week of Life for the First 5 Years: The Early Postnatal Period

- The riskiest week of life
- Risk of death per each week of life during the first 5 years of life, based on global average mortality rates

- Early neonatal (Day 0-6): 25
- Late Neonatal (Day 7-28): 1.66
- Post-neonatal (1-11 months): 0.54
- Age 12-59 months: 0.14


Newborn Deaths

- Birth process was the antecedent cause of 2/3 of deaths due to infections:
  - Lack of hygiene at childbirth and during newborn period
  - Home deliveries without skilled birth attendants
- Birth asphyxia in developing countries:
  - 3% of newborns suffer mild to moderate birth asphyxia
  - Prompt resuscitation is often not initiated or procedure is inadequate or incorrect

Newborn Deaths (cont.)

- Low birth weight:
  - An extremely important factor in newborn mortality
- Hypothermia and newborn deaths:
  - Significant contribution to deaths in low birth weight infants and preterm newborns
  - Social, cultural and health practices delaying care to the newborn
- Countries with high STI prevalence and inconsistent prophylactic practices:
  - Ophthalmia neonatorum is a common cause of blindness
Newborn Deaths (cont.)

Place of childbirth:
- Up to 2 out of 3 childbirths in most developing countries occur at home
- Only half are attended by skilled birth attendants

Strategies for improving newborn health should target:
- Birth attendant, families and communities
- Health care providers within the formal health system

Essential Newborn Care Interventions

- Clean childbirth and cord care:
  - Prevent newborn infection

- Thermal protection:
  - Prevent and manage newborn hypo/hyperthermia

- Early and exclusive breastfeeding:
  - Started within 1 hour after childbirth

- Initiation of breathing and resuscitation:
  - Early asphyxia identification and management

Question ??

- What is the essential care for a newborn immediately after birth?

Essential Newborn Care Interventions (cont.)

- Eye care:
  - Prevent and manage ophthalmia neonatorum

- Immunization:
  - At birth: Bacille Calmette-Guerin (BCG) vaccine, oral poliovirus vaccine (OPV) and hepatitis B virus (HBV) vaccine (WHO)

- Identification and management of sick newborn
- Care of preterm and/or low birth weight newborn
Cleanliness to Prevent Infection

- Principles of cleanliness essential in both home and health facilities childbirths
- Principles of cleanliness at childbirth:
  - Clean hands
  - Clean perineum
  - Nothing unclean introduced vaginally
  - Clean delivery surface
  - Cleanliness in cord clamping and cutting
  - Cleanliness for cord care

Cleanliness to Prevent Infection (cont.)

- Infection prevention/control measures at health care facilities and after discharge
- Caretaker and all others should wash hands before touching or caring for baby
- Avoid contact with sick children and adults

Question ??

- What are the key principles and practices in cord care?

Cord Care

- Do not apply dressings or substances of any kind
- If cord bleeds, re-tie
- Usually falls off 4–7 days after birth
- Until the cord falls off, place the cord outside the nappy to prevent contamination with urine/feces
- Wash with soap and clean water only (if soiled)
Thermal Protection

- **Newborn physiology:**
  - Normal temperature: 36.5–37.5°C
  - Hypothermia: < 36.5°C
  - Stabilization period: 1st 6–12 hours after birth:
    - Large surface area
    - Poor thermal insulation
    - Small body mass to produce and conserve heat
    - Inability to change posture or adjust clothing to respond to thermal stress

- **Increased hypothermia:**
  - Newborn left wet while waiting for delivery of placenta
  - Early bathing of newborn (within 24 hours)

Hypothermia Prevention

- **Deliver in a warm room**
- **Dry newborn thoroughly and wrap in dry, warm cloth**
- **Give to mother as soon as possible:**
  - Skin-to-skin contact first few hours after childbirth
  - Promotes bonding
  - Enables early breastfeeding
- **Check warmth by feeling newborn’s feet every 15 minutes**
- **Bathe after temperature is stable (after 24 hours)**

Early and Exclusive Breastfeeding

- **Early contact between mother and newborn:**
  - Enables breastfeeding
  - Rooming-in policies in health facilities prevents nosocomial infection

- **Best practices:**
  - No prelacteal feeds or other supplement
  - Giving first breastfeed within 1 hour of birth
  - Correct positioning to enable good attachment of the newborn
  - Breastfeeding on demand
  - Psycho-social support to breastfeeding mother

Early and Exclusive Breastfeeding (cont.)

- **Starting to breastfeed:**
  - Colostrum is the first milk secreted and is important for the baby for nutrition and disease protection
  - Most babies are ready to feed 15-55 minutes after birth; success at the first feeding often indicates successful later breastfeeding

- **Self-attachment:**
  - Place baby face down on mother’s abdomen
  - Support baby as it moves toward breast
  - Allow the baby time to mouth the nipple before taking it into the mouth

Early and Exclusive Breastfeeding (cont.)

Signs that baby is getting enough milk:
- The baby passes urine at least 6 times in 24 hours
- You can hear the baby swallow the feeding
- The mother’s breast feels softer after a feed
- The baby gains weight over time (after the first week)
- The baby seems content after feeding


Breathing Initiation and Resuscitation

- Spontaneous breathing (> 30 breaths/min.) in most babies:
  - Gentle stimulation, if at all
- Newborn resuscitation may be needed:
  - Fetal distress
  - Thick meconium staining
  - Vaginal breech deliveries
  - Preterm
- Effectiveness of routine oro-nasal suctioning unknown:
  - Biologically plausible advantages – clear airway
  - Potentially real disadvantages – cardiac arrhythmia
  - Bulb suctioning preferred (but every baby should have own bulb to prevent infection transmission)


Povidone-Iodine for Conjunctivitis:
Objective and Design

- Objective: To determine incidence and type of conjunctivitis after povidone-iodine in Kenya
- Design: Rotate regimen weekly: erythromycin, silver nitrate, povidone iodine
  - More infections in silver nitrate than povidone-iodine, OR 1.76, p < 0.001
  - More infections in erythromycin than in povidone-iodine OR 1.38, p=0.001


Povidone-Iodine for Conjunctivitis:
Conclusion

Povidone-iodine:
- Is good prophylaxis
- Has wider antibacterial spectrum
- Causes greater reduction in colony-forming units and number of bacterial species
- Is active against viruses
- Is inexpensive

Immunization

- BCG vaccinations in all population at high risk of tuberculosis infection
- Single dose of OPV at birth or in the 2 weeks after birth
- HBV vaccination as soon as possible where perinatal infections are common

Counseling

Even if the mother is being discharged a few hours after childbirth, she should be counseled about:
- Exclusive breastfeeding
- Hygiene – eye and cord care
- Thermal protection
- Danger signs and what to do about them

Role Play

Conduct and discuss role play as described in handout.

Question ??

What are the newborn danger signs?
Complication Readiness Plan

Newborn danger signs:
- Breathing difficulty
- Convulsion, spasms, loss of consciousness, or arching of back
- Cyanosis (blueness)
- Hot to touch (fever)
- Cold to touch
- Bleeding
- Jaundice (yellowness)
- Pallor
- Diarrhea
- Persistent vomiting or abdominal distension
- Not feeding or poor sucking
- Pus or redness of umbilicus, eyes or skin
- Swollen limb or joint
- Floppiness
- Lethargy

Summary

The essential components of normal newborn care include:
- Clean delivery and cord care
- Thermal protection
- Early and exclusive breastfeeding
- Monitoring
- Eye care
- Immunization

References


References (cont.)


MODULE 12: BEST PRACTICES IN POSTPARTUM CARE OF THE MOTHER—SESSION PLAN

MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Practices in Postpartum Care of the Mother</td>
<td>50 min</td>
<td></td>
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</tbody>
</table>

SESSION OBJECTIVES

*By the end of this session, participants will be able to:*
- Describe the significance of postpartum care
- Describe client assessment during the postpartum period
- Describe the elements of care provision of the postpartum mother

<table>
<thead>
<tr>
<th>Methods and Activities</th>
<th>Materials/Resources</th>
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</thead>
<tbody>
<tr>
<td><strong>Illustrated presentation/discussion: Basic postpartum care (30 min)</strong></td>
<td>Boxlight projector</td>
</tr>
<tr>
<td>- Ask questions of the larger group throughout the session.</td>
<td>PowerPoint presentation</td>
</tr>
<tr>
<td>- Intersperse presentation with questions, examples and discussion.</td>
<td>OR</td>
</tr>
<tr>
<td>- Be sure to include:</td>
<td>Overhead projector with transparencies (Handouts of presentations if no electricity)</td>
</tr>
<tr>
<td>- Neglect of postpartum care</td>
<td>Case Study: Postpartum Care with Answer Key</td>
</tr>
<tr>
<td>- Elements of basic postpartum care:</td>
<td>Learning Guide and Checklist for Postpartum Care</td>
</tr>
<tr>
<td>- Breastfeeding and Breast Care (NOTE: can delete 5 slides on breastfeeding if you plan to follow with the breastfeeding presentation)</td>
<td></td>
</tr>
<tr>
<td>- Complication readiness including maternal postpartum danger signs</td>
<td></td>
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<tr>
<td>- Support for mother-baby-family relationships</td>
<td></td>
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<tr>
<td>- Family planning</td>
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<td>- Nutritional support</td>
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<td>- Self-care</td>
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<tr>
<td>- HIV counseling and testing</td>
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<tr>
<td>- Immunizations and other preventive care</td>
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<tr>
<td>- Follow-up visits</td>
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**Case Study (20 min)**
- Participants divide into groups of three or four.
- Each group should read through the Case Study: Postpartum Care and answer the questions.
- Reassemble the group and discuss the answers.

(Depending on class needs and time, a Demonstration of Postpartum Care can be conducted.)
CASE STUDY: POSTPARTUM ASSESSMENT AND CARE

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group developed.

CLIENT PROFILE

Mrs. A. is 18 years of age and gave birth to her first baby at home 10 days ago. Her pregnancy, labor and birth were uncomplicated. The midwife who attended the birth checked Mrs. A. and her baby the day after the birth. She has not seen a health care provider since then. This is her first postpartum clinic visit. Mrs. A. has come to the clinic because she has sore, red nipples. Her baby is with her.

PRE-ASSESSMENT

1. Before beginning your assessment, what should you do for and ask Mrs. A.?

ASSESSMENT
(Information gathering through history, physical examination and testing)

2. What history will you include in your assessment of Mrs. A., and why?

3. What physical examination will you include in your assessment of Mrs. A., and why?

4. What laboratory tests will you include in your assessment of Mrs. A., and why?

DIAGNOSIS
(Interpreting information to identify problems/needs)

You have completed your assessment of Mrs. A, and your main findings include the following:

History:
- Mrs. A. is feeling well but has sore, red nipples.
- She reports that the baby breastfeeds approximately every 2 hours.
- All other aspects of her history are normal or without significance.

Physical Examination:
- Mrs. A generally appears well.
- Vital signs are as follows: BP is 110/72; pulse is 76 beats per minute; temperature is 37.6°C.
There is no redness, tenderness, streaking or masses palpable in the breast tissue; however, during observation of breastfeeding, it was found that the baby was not attaching well to the breast.

All findings on examination of the baby are within normal range and without significance.

All other aspects of her physical examination are within normal range and without significance.

Testing:

HIV test is negative.

5. Based on these findings, what is Mrs. A.'s diagnosis (problem/need), and why?

CARE PROVISION
(Implementing plan of care and interventions)

6. Based on your diagnosis (problem/need identification), what is your plan of care for Mrs. A., and why?

EVALUATION

7. Based on these findings, what is your continuing plan of care for Mrs. A., and why?
Module 12: Postpartum Care of the Mother - 4

Best Practices in Maternal and Newborn Care

Learning Resource Package

KNOWLEDGE ASSESSMENT: POSTPARTUM CARE OF THE MOTHER

Instructions: Write the letter of the single **best** answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Breastfeeding should continue without the addition of other foods or fluids:
   a. For the first 4 months
   b. For the first 6 months
   c. For the first 9 months

2. Messages to the postpartum mother concerning sexual relations include:
   a. Increased susceptibility to STIs by the postpartum woman, and increased risk of MTCT of HIV if new infection acquired during breastfeeding
   b. Abstinence or mutually monogamous sex with uninfected partner
   c. Consistent use of condoms
   d. All of the above

3. Messages concerning which of the following subjects should be part of postpartum care for every woman?
   a. Breastfeeding and breast care and complication readiness
   b. Nutritional support and HIV counseling
   c. Support for mother-baby-family relationships and family planning
   d. a) and b)
   e. All of the above

Instructions: In the space provided, print a capital **T** if the statement is **true** or a capital **F** if the statement is **false**.

4. Only the woman who has tested negative for HIV should practice early and exclusive breastfeeding.  
   _____

5. The postpartum woman should eat a diet that is diversified and include one extra (two extra if breastfeeding) serving of staple food per day.  
   _____

6. The woman who has not received a tetanus immunization during pregnancy does not need to be given a tetanus immunization during the postpartum period.  
   _____
Session Objective

By end of the session, participants will be able to:
- Describe the significance of postpartum care
- Describe client assessment during the postpartum period
- Describe the elements of care provision of the postpartum mother

Basic Postpartum Care Provision

- Mother and baby should be seen at 6 hours after birth, and again before discharge if in a facility; or approximately 6 hours after birth if delivered at home
- Every mother and baby should be visited again by a provider or trained community health worker by 72 hours after birth

When is the mother most vulnerable? (Evidence from Matlab, Bangladesh)
4 Million Newborn Deaths - When?

- Up to 50% of neonatal deaths are in the first 24 hours.
- 75% of neonatal deaths are in the first week – 5 million deaths.


Neglected Area of Care

- Few women in Africa receive postpartum care.
- An estimated 70% of women in developing countries, do NOT receive postpartum care.
- In a study by Forte et al. of 29 countries, those women who received PPC receive it within 2 days, but for the other nine countries, the peak of PPC occurs 7–41 days after birth.

(Forte A et al. 2006. Postpartum Care Levels and Determinants in Developing Countries.)

Basic Postpartum Care Provision (cont.)

During every visit:
- Assessment of condition of mother and baby
- Provide all elements of basic care package
- If abnormal s/s (based on assessment), provide additional care
- Integrate maternal and newborn care visits when possible

During return visit:
- Make necessary changes to care plan (based on assessment)
- Review and update mother’s and newborn’s complication readiness plan
- Reinforce key messages
- Replenish supply of supplements and drugs/medications

Note: Information gathered through assessment should be taken into consideration during care provision.

Question ??

- What basic care should be included in care of the postpartum mother?
Basic Postpartum Care Provision (cont.)

- Ongoing supportive care up to discharge
- Basic care package:
  - Breastfeeding and breast care
  - Complication readiness plan
  - Support for mother-baby-family relationships
  - Family planning
  - Nutritional support
  - Self-care and other healthy practices
  - HIV counseling and testing
  - Immunizations and other preventive measures

Breastfeeding and Breast Care

- Early and exclusive breastfeeding (if HIV- or HIV status unknown; or HIV+ woman makes informed decision to exclusively breastfeed)
- Feeding guidelines
- Additional advice for woman
- Breast care
- Breastfeeding information and support – provide as needed

Question ??

- For how many months is it recommended that a woman should continue breastfeeding?

Breastfeeding and Breast Care (cont.)

Feeding guidelines:

- Breastfeed exclusively for first 6 months – no other food or fluids
- Breastfeed on demand day and night – every 2–3 hours during first weeks
Breastfeeding and Breast Care (cont.)

Additional advice:
- Choose position that is comfortable and effective
- Use both breasts at each feed; do not limit time at either
- Ensure adequate sleep/rest – take nap when baby sleeps
- Ensure adequate food/fluid intake – glass of fluids per feed; extra meal per day

Breastfeeding and Breast Care (cont.)

Breast care:
- To prevent engorgement, breastfeed every 2–3 hours
- Wear supportive (but not tight) bra or binder
- Keep nipples clean and dry
- Wash nipples with water only once per day – no soap
- After breastfeeding, leave milk on nipples and allow to air dry

Complication Readiness Plan

At first visit after birth:
- Introduce concept and each element
- Assist in developing plan

Return visits:
- Check arrangements made
- Note changes and problems

Components:
- Appropriate health care facility for emergency care
- Emergency transportation
- Emergency funds
- Decision-maker/decision-making process
- Support person/companion
- Blood donor
- Danger signs for mother and newborn

Complication Readiness Plan (cont.)

Danger signs: ensure that woman and family know danger signs for her and her newborn that indicate need to enact complication readiness plan
Question ??

- Turn to the person sitting next to you and make a list of the maternal postpartum danger signs.
- After 4 minutes, one or two pairs can volunteer to read their list.

Complication Readiness Plan (cont.)

Maternal danger signs:
- Vaginal bleeding (heavy or sudden increase)
- Breathing difficulty
- Fever
- Severe abdominal pain
- Severe headache/blurred vision
- Convulsions/loss of consciousness
- Foul-smelling discharge from vagina or tears/incisions
- Pain in calf, with or without swelling
- Verbalization/behavior indicating she may hurt self or baby; hallucinations

Support for Mother-Baby-Family Relationships

- As soon as possible after birth, discuss issues mentioned on following slides with woman and, if she permits, partner/family
- Return visits, check progress made in integrating care of baby into daily life

Support for Mother-Baby-Family Relationships (cont.)

- Bonding:
  - Encourage touching, holding, exploring
  - Encourage rooming-in
- Challenges:
  - Discuss woman’s increased need for rest and (if breastfeeding) intake of food/fluids
  - Discuss woman’s increased workload
Support for Mother-Baby-Family Relationships (cont.)

- **Support:**
  - Encourage sharing in care of newborn
  - Assist in devising strategies for overcoming challenges

- **Information:**
  - Discuss key aspects of postpartum and newborn care
  - Encourage questions

Support for Mother-Baby-Family Relationships (cont.)

- **Encouragement and praise:**
  - Help build confidence
  - Provide reassurance that woman is capable of caring for newborn

Family Planning

**Discuss:**

- Birth spacing – healthy timing and spacing:
  - Intervals of 2–5 years beneficial to women and babies
- Woman’s previous experience, beliefs, preferences regarding contraception
- Safe methods for postpartum women – benefits and limitations of each
- Available methods and how to access them

Family Planning (cont.)

**Discuss (cont.):**

- Return of fertility after birth:
  - Variable
  - Ovulation can occur before menstruation resumes
- Women who are not breastfeeding may ovulate by 21 days
- 5–10% of women conceive within first year postpartum
- Women who breastfeed exclusively for 6 months ovulate by 7 months (due to lactational amenorrhea)
Family Planning (cont.)

- Discuss (cont.):
  - Benefits of LAM and how to use LAM successfully, for women who choose this method
  - Dual protection with condoms

- Assist the woman in choosing a method that best meets her needs and fertility goals

- Ensure that she receives an appropriate method or has access to the service

Nutritional Support

General guidelines:

- Eat balanced diet including variety of foods each day
- Have at least one extra serving of staple food per day
- Try smaller, more frequent meals if necessary

Take micronutrient supplements as directed:

- Folic acid, vitamin A, zinc, calcium, iron and other nutrients if micronutrient requirements cannot be met through food sources

Nutritional Support (cont.)

Guidelines for breastfeeding women:

- Per day:
  - Two extra servings of staple food per day
  - Eat a diverse diet with animal products and fortified foods – no specific foods should be eaten or avoided
  - Drink in response to thirst—excessive fluids not needed
  - Give Vitamin A supplement where deficiency is common – Two 200,000 unit doses should be given
  - Use iodized salt

- Decrease workload; increase rest

- Also, avoid alcohol and tobacco, which can decrease milk production

Self-Care and Other Healthy Practices

Tips:

- Individualize messages based on woman’s history and other relevant findings
- Encourage woman’s partner to be present during these discussions
**Self-Care and Other Healthy Practices (cont.)**

**Prevention of infection/hygiene:**
- Good general hygiene (handwashing, safe food and water preparation/handling, bathing and general cleanliness)
- Good genital hygiene – especially important for postpartum women because more susceptible to infection

**Good genital hygiene (cont.):**
- Keep vulvar/vaginal area clean and dry
- Wash hands before and after touching
- Wash genitals after using toilet
- Change pads 6 times/day in first week; then 2 times/day

**Self-Care and Other Healthy Practices (cont.)**

**Rest and activity:**
- Increase rest time:
  - All postpartum women need additional rest to speed recovery
  - Breastfeeding women need even more rest
- Wait at least 4 to 5 weeks to resume normal activity; start back gradually

**Sexual relations and safer sex:**
- Avoid sex for at least 2 weeks and until it is comfortable
- Increased susceptibility to STIs during postpartum period
- Abstinence or mutually monogamous sex with uninfected partner – only sure protection
- Consistent use of condoms
- Avoidance of sexual practices that may further increase risk of infection (e.g., anal sex)
HIV Counseling and Testing

- 1st visit:
  - Ensure confidentiality of testing and all HIV-related discussion
  - Provide pretest counseling
- Return visit (after testing): provide post-test counseling

Immunization and Other Preventive Measures

- Tetanus toxoid immunization
- Iron/folate supplementation
- Region/population-specific preventive measures, e.g., malaria prevention

Immunization and Other Preventive Measures (cont.)

<table>
<thead>
<tr>
<th>Tetanus Toxoid Immunization Schedule</th>
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</thead>
<tbody>
<tr>
<td>TT Injection</td>
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<tr>
<td>TT 1</td>
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<tr>
<td>TT 2</td>
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<tr>
<td>TT 3</td>
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<tr>
<td>TT 4</td>
</tr>
<tr>
<td>TT 5</td>
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</tbody>
</table>

Immunization and Other Preventive Measures (cont.)

Iron/folate supplementation:
- To prevent anemia, prescribe: iron 60 mg + folate 400 mcg orally once daily for 3 months
- Dispense supply to last until next visit
- Eat foods rich in vitamin C, which help iron absorption
- Avoid tea, coffee and colas, which inhibit iron absorption
- Possible side effects of iron/folate – black stools, constipation and nausea
Immunization and Other Preventive Measures (cont.)

In areas of endemic disease/deficiency:

- Insecticide-treated nets (ITNs) for malaria – both mother and baby should sleep under one
- Presumptive treatment for hookworm infection
- Vitamin A supplements
- Iodine supplements

Scheduling a Return Visit

- Advise her to bring her partner or other companion with her if possible
- Ensure that she understands that she should not wait for next appointment if she or newborn is having problems or develops any danger sign
- Review maternal and newborn danger signs and complication readiness plan

Case Study

- Divide participants into groups of 3 or 4
- Each group should read the Case Study: Postpartum Care and answer the questions
- Reassemble the group and discuss the answers

Summary

Postpartum care provision includes:

- Ongoing supportive care up to discharge
- Basic care provision for mother and newborn:
  - Breastfeeding and breast care
  - Complication readiness plan
  - Support for mother-baby-family relationships
  - Newborn care
  - Family planning
  - Nutritional support
  - Self-care and other healthy practices
  - HIV counseling and testing
  - Immunizations and other preventive measures
- Care is individualized according to woman’s and newborn’s needs, history and other findings
References

Ganges F. 2006. Postpartum Care, a presentation in Accra, Ghana, Basic Maternal and Newborn Care Technical Update. (April).


# SUPPLEMENTARY MODULE 12.1: BEST PRACTICES IN BREASTFEEDING SUPPORT—SESSION PLAN

**MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE**

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Practices in Breastfeeding Support</td>
<td>90 min</td>
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</table>

### SESSION OBJECTIVES

_By the end of this session, participants will be able to:_

- Define exclusive and non-exclusive breastfeeding
- Counsel mother and family on breastfeeding
- State interventions during labor, birth and postpartum that positively and negatively affect breastfeeding
- Recognize correct attachment and effective sucking
- Counsel mother on the management of breastfeeding problems
- Discuss natural instinct of a newborn to crawl up mother’s abdomen to breast immediately after birth

### Methods and Activities

<table>
<thead>
<tr>
<th>Illustrated presentation/discussion: Focused antenatal care (30 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illustrated Presentation/Discussion: Ask questions and provide answers and discussion throughout presentation. Include:</td>
</tr>
<tr>
<td>- Definitions of exclusive and non-exclusive breastfeeding</td>
</tr>
<tr>
<td>- Advantages of breastfeeding for baby</td>
</tr>
<tr>
<td>- Advantages of breastfeeding for mother</td>
</tr>
<tr>
<td>- Interventions during labor, birth and postpartum that positively affect breastfeeding</td>
</tr>
<tr>
<td>- Interventions during labor, birth and postpartum that negatively affect breastfeeding</td>
</tr>
<tr>
<td>- Correct attachment</td>
</tr>
<tr>
<td>- Correct holding positions</td>
</tr>
<tr>
<td>- Technique for expression of breast milk</td>
</tr>
<tr>
<td>- Management of common breastfeeding problems</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Video and discussion: Delivery self-attachment (30 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show video.</td>
</tr>
<tr>
<td>Discuss impressions of video and any personal experiences of participants in using this technique.</td>
</tr>
</tbody>
</table>

### Role Play (30 min)

- Divide participants into groups of two.
- One participant counsels the other on expression of breast milk using guide.
- Participants switch roles.

### Materials/Resources

- Boxlight projector
- Powerpoint Presentation
  OR
  - Overhead projector with transparencies (Handouts of presentations if no electricity)
- Expressing breast milk handouts (steps and illustration)
- Managing problems handouts
- Video: Delivery self-attachment
KNOWLEDGE ASSESSMENT: BREASTFEEDING SUPPORT

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Advantages to the baby of breastfeeding include:
   a. Easily digested
   b. Supports immune system to prevent infection
   c. Promotes optimal brain development
   d. a) and b)
   e. a) and c)
   f. All of the above

2. Advantages of breastfeeding to the mother include:
   a. Promotes involution of uterus
   b. Promotes maternal-infant bonding
   c. Prevents conception for the first year
   d. a) and b)
   e. b) and c)
   f. All of the above

3. Components of effective attachment and sucking include:
   a. Alignment of infant’s ear, shoulder and hip
   b. Infant’s lips are turned slightly inward during sucking
   c. Can hear infant swallowing
   d. a) and c)
   e. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

4. Exclusive breastfeeding is recommended for the first 9 months.  _____

5. Bathing the baby gently with warm water prior to its first feed promotes successful breastfeeding.  _____

6. If not breastfeeding, a woman may ovulate as early as 21 days postpartum.  _____
HANDOUT: BREASTFEEDING

CRADLE HOLD

The mother sits up and puts the baby’s body on the side across her lap, facing her. She supports the baby's head in the bend of her elbow and the back and bottom with her forearm.

UNDER ARM HOLD

A mother can put her baby under her arm, holding the baby’s head and neck in her hand. The baby’s feet go towards her back. This position helps if the mother had a cesarean delivery or if the baby does not take in enough of the mother’s nipple and areola in other positions. In this hold, the milk is pulled more from the outside of the breasts.
CROSS-CRADLE HOLD
This position is almost like the cradle hold, but the mother uses the other arm to hold the baby. The baby’s head is held by the mother’s open hand. This position makes it easy to move the baby to the breast and into a comfortable position as the baby latches on and sucks.

SIDE LYING HOLD
This can also be called the eat-and-sleep hold. Both the mother and baby are on their sides facing each other. The mother uses her hand under the baby to position the baby’s head at her lower breast. The other hand pulls the baby closer to her. This hold helps the baby latch correctly on the breast during the first few days. It also is a good hold for a mother who had a cesarean delivery.
GUIDE TO STEPS: EXPRESSING BREAST MILK

1. Explain to the mother:
   - Why she needs to express breast milk and cup feed her baby
   - That you will show her each step and do it with her so she can learn to do it alone
   - That she should use a cup that has been boiled to collect expressed breast milk

2. Find a private place where the mother can relax near to her baby.

3. Wash your hands with soap and water. Dry with a clean, dry cloth or air dry.

4. Ask the mother to do the same.

5. Put on gloves (need not be sterile, mother does not need gloves).

6. Put clean, warm, wet cloths on the breasts for 5 minutes.

7. Have nearby a cup or container that has a wide opening and has been boiled.

8. Massage breasts from outside toward nipple to bring milk down.

9. Hold the breast in a “C-hold” (thumb on top and other fingers below the breast), with fingers away from the areola.
### GUIDE TO STEPS: EXPRESSING BREAST MILK

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>Express milk out:</td>
</tr>
<tr>
<td></td>
<td>- Lean slightly forward so the milk will go into the container.</td>
</tr>
<tr>
<td></td>
<td>- Press thumb and other fingers in toward the body.</td>
</tr>
<tr>
<td></td>
<td>- Squeeze thumb and other fingers together.</td>
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<tr>
<td></td>
<td>- Move them toward the areola, so the milk in the collecting areas behind the areola comes out.</td>
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<tr>
<td></td>
<td>- Repeat actions to express milk until milk flow decreases.</td>
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<tr>
<td></td>
<td>- Be patient, even if no milk comes at the beginning.</td>
</tr>
<tr>
<td></td>
<td>- Move hands around the breast so milk is expressed from all areas of the breast.</td>
</tr>
<tr>
<td></td>
<td>- It does not matter what hand is used, or use both hands.</td>
</tr>
<tr>
<td>11.</td>
<td>Express one breast for at least 3–5 minutes until the flow slows, then express the other side, then repeat both sides.</td>
</tr>
<tr>
<td>12.</td>
<td>Explain that expressing milk can take 30 minutes or more when starting.</td>
</tr>
</tbody>
</table>
Expressing Milk: 1) Press in toward the chest,
2) Squeeze fingers together
### CHART 3.4  SORE OR CRACKED NIPPLES: DECISION-MAKING CHART

| History | Ask the mother:  
|         | - What are you feeling? The mother’s nipples may be sore or even painful.  
|         | - When does it hurt? Pain is noticed when the baby is first put to the breast at the beginning of a feed. |

| Exam | Examine the breasts and nipples: the nipples may be red, cracked, and/or bleeding.  
|      | Observe the baby breastfeeding: if the baby’s position and attachment are not good, it can cause sore or cracked nipples.  
|      | - Is the baby’s body close to the mother’s body?  
|      | - Is the baby’s chin touching the breast?  
|      | - Is the baby’s mouth wide open?  
|      | - Is the lower lip turned outward?  
|      | - Is more of the areola seen above the baby’s mouth than below it?  
|      | - Ask if the mother’s breasts and nipples comfortable? |

| Problems/needs | Sore or cracked nipples  
|                | Other problems to think about:  
|                | - Thrush: This is a fungus or yeast infection that will cause the nipples to be red. However, the baby usually also has thrush in her mouth, with white patches on the mucous membranes and the tongue. The baby with thrush may not want to eat because of a sore mouth. (See chapter 6.) |

### CHART 3.5 NOT ENOUGH MILK: DECISION-MAKING CHART

**Problems/needs**
The baby is not getting enough milk. List the cause of not enough milk, if known.

The mother thinks she does not have enough milk, even though the baby is getting enough.

**Plan of care**
If needed, counsel and help the mother with position and baby attachment.

- Reassure the mother that she can make lots of milk.
- Advise the mother to:
  - Rest more.
  - Drink more fluids (with every meal and every breastfeeding).
  - Feed the baby on demand, at least every 2-3 hours, more often if the baby wants to suck.
  - Let the baby feed for as long as possible on each breast.
  - Feed only at the breast.
  - Stay in bed and keep the baby with her so the baby can feed often during the time she is trying to increase her milk supply.

Note: It usually only takes 24-48 hours to increase breast milk.

- Reassure the mother that she has enough milk for her baby:
  - Show her a record of the baby's weight gain (growth chart) and explain that the baby's weight gain is normal.
  - Express a little milk from her breasts to show her that she is producing milk.
  - Explain normal growth spurts and changes in the “let-down” reflex over time.
  - To reassure her that the baby is growing well, have her bring him back for weekly weighing, if possible.

**Follow-up**
See the mother and baby in 3 days. Repeat the above history and exam. Consider scheduling weekly visits to monitor weight gain. Advise the mother to return if the problem worsens or if there are any danger signs.
**CHART 3.6  BREAST ENGORGEMENT: DECISION-MAKING CHART**

### History

Ask the mother:
- What do you feel in your breasts? Engorged breasts are hard, swollen, and painful.
- How often does the baby breastfeed?
- How long ago did you give birth? Engorgement usually happens about 2-3 days after birth, if the baby is not breastfed for a long period, or if the woman and baby are separated.
- Do you have any fever, chills, or one area of the breast that has a lump, is red, and is hot? These questions are to rule out other problems, such as a breast infection. Engorgement may be accompanied by a low fever (up to 38 °C or 100.4 °F) lasting not more than 24 hours. If the fever lasts more than 48 hours, suspect mastitis.

### Exam

Examine both breasts. Engorged breasts are hard, swollen, and painful. Usually both breasts become engorged at the same time.

Look at the baby breastfeeding. See whether the baby is attaching and sucking well.

### Problems/needs

Breast engorgement

Other problems to think about:
- **Mastitis**: Usually starts 10 days or more after birth, with fever, one area of redness, and heat. Usually only one breast is affected.
- **Plugged milk duct**: No fever; the mother feels well except for one hard, swollen area of one breast.
CHART 3.6 BREAST ENGORGEMENT: DECISION-MAKING CHART

Plan of care

- Explain to the mother how to reduce breast engorgement.
- Advise her to:
  - Before each breastfeed, put hot wet clean cloths on the breasts for 5-10 minutes or take a warm shower.
  - Before each breastfeed, hand-express a small amount of milk before putting the baby to the breast. This softens the area around the nipple (the areola) and helps milk flow, making it easier for the baby to attach.
  - Breastfeed often, at least every 2-3 hours. If the baby is not able to suck, express milk every 2-3 hours. [Engorged breasts that are not emptied can become infected.]
  - At each feed, empty the first breast before offering the other breast to the baby.
  - If the breasts still feel full after a breastfeed, encourage the baby to feed longer or express breast milk for a few minutes [until the breasts feel softer].
  - Help close the milk ducts and make the breasts more comfortable after breastfeeding by putting a cold cloth on both breasts for 5-10 minutes after breastfeeding.

Advise the mother on other comfort measures for engorgement:
- Avoid tight-fitting bras.
- Apply cold compresses to the breasts between feedings to help reduce swelling and pain.
- Put cold cabbage leaves on the breasts.\(^\text{22,}^\text{20}\)
  - Wash and dry cabbage leaves with clean water.
  - Crumple the leaves with your hand to crush veins before using.
  - Put one or more leaves on each breast to completely cover them (including under the arm).
  - Wear a bra or tie on a cloth to hold the leaves in place.
  - Wear the leaves until they become soft.
- Take paracetamol 500 mg by mouth 3 times a day as needed.
- Explain the signs of breast infection, and that the mother should see a health worker if she has any signs of infection:
  - Pain, redness, heat, a lump in one breast, fever and chills

Follow-up

- Not needed if engorgement stops and there is no sign of a breast infection.
Session Objectives

By end of the session, participants will be able to:

- Define exclusive and non-exclusive breastfeeding
- Counsel mother and family on breastfeeding
- State interventions during labor, birth and postpartum that positively and negatively affect breastfeeding
- Recognize correct attachment and effective sucking
- Counsel mother on the management of breastfeeding problems

Question ??

What is “exclusive breastfeeding”?  

Definitions

- Exclusive breastfeeding means that for the first 6 months the baby is breastfed exclusively. Nothing else is given to the baby to eat or drink during this time.
- If the baby is given water, breast milk substitute such as formula or cereal, the baby is not exclusively breastfed. This is not recommended.
Question ??

What are the general benefits of breastfeeding for the infant?

Benefits to Baby

- More easily digested
- Adapts to needs of growing infant
- Promotes optimal brain development
- Supports immune system to prevent infections
- Provides some protection against allergies
- Decreases risk of Sudden Infant Death (SIDS)

Question ??

What are the general benefits of breastfeeding for the mother?

Benefits to Mother

- Promotes uterine involution
- Promotes maternal-infant bonding
- Promotes child spacing (contraceptive effect)
- Convenient
- Economic
Question ??

What are the intrapartum and postpartum interventions that may affect lactation?

Practices that Promote Breastfeeding

- Initiate breastfeeding within 1 hour
- Immediate skin-to-skin contact
- Avoid routine newborn care until after infant has had first feed
- Avoid separation of mother and baby
- Allow feeding on demand
- Evaluate attachment and assist as needed

Practices that Negatively Impact Breastfeeding

- Medications during labor and birth
- Separation of infant from mother
- Prelacteal feeds
- Delay in initiating breastfeeding
- Timed feeds or feeding intervals
- Use of artificial nipples
- Gift packs with breast milk substitute

Question ??

What are the components of correct attachment and effective sucking?
Attachment and Sucking
- Alignment of infant’s ear, shoulder, hip (in cradle hold)
- Infant’s lips everted (like fish lips) when attached
- Infant’s tongue forward and cupped
- Areola compressed
- Can hear infant swallow

Question ??
What are the general benefits of breastfeeding for the infant?

Positions for Effective Breastfeeding
- Cradle position
- Cross-cradle position
- Football clutch position
- Side lying position

SEE HANDOUT

Additional Advice
- Choose position that is comfortable and effective
- Use both breasts at each feed; do not limit time at either
- Ensure adequate sleep/rest – take nap when baby sleeps
- Ensure adequate food/fluid intake – glass of fluids per feed; extra meal per day
Hand Expression of Breast Milk

1. Press in toward the chest, and
2. Squeeze fingers together

SEE ILLUSTRATION IN HANDOUT

Practice

- Participants divide into groups of two
- Have one participant play the role of support person for woman who needs to express breast milk – using handout

Preventing and Managing Problems

- Sore or cracked nipples:
  - Be sure baby is attaching and sucking correctly
  - Start feeding the baby on the less sore breast
  - Keep breasts clean and dry between feeds
  - Take paracetamol for pain
  - Do not stop breastfeeding
  - If mother is HIV-positive, baby should not drink from a cracked or bleeding nipple

Preventing and Managing Problems (cont.)

- Baby “not getting enough milk”:
  - Reassure mother that she can make sufficient milk
  - Reassure mother than as long as baby urinates at least 6 times per day, the baby is getting sufficient milk
  - Follow weight of baby
  - Rest more
  - Increase fluid intake
  - Feed baby on demand
  - Let baby suck as long as it wants to
Preventing and Managing Problems (cont.)

- **SEE HANDOUTS**
- **Engorgement – swollen fullness of breasts:**
  - Take paracetamol 500 mg three times per day
  - Use cold compresses between feeds
  - Use warm compress 10–15 minutes immediately before feed
  - Hand express a little milk before feed to improve attachment
  - Feed frequently, at least every 2–3 hours
  - Empty one breast completely before offering other breast
  - Explain to seek medical help if redness, sore area, fever

Preventing and Managing Problems (cont.)

- **Mastitis – infection of breast:**
  - Give antibiotics (cloxacillin 500 mg by mouth 3/day for 10 days OR erythromycin 250 mg by mouth 3/day for 10 days
  - Encourage to continue breastfeeding
  - Support breasts with binder or bra
  - Apply cold compresses between feeds
  - Give paracetamol 500 mg by mouth as needed

Preventing and Managing Problems (cont.)

- **Breast abscess – fluctuant swelling with pus:**
  - Give antibiotics (cloxacillin 500 mg by mouth 3/day for 10 days OR erythromycin 250 mg by mouth 3/day for 10 days
  - Refer to incise and drain breast
  - Encourage to continue breastfeeding
  - Support breasts with binder or bra
  - Apply cold compresses between feeds
  - Give paracetamol 500 mg by mouth as needed

References

Clark A and Beck D. *Breastfeeding: A Lesson Plan.*
SESSION TOPIC | TIME
--- | ---
Best Practices in Postpartum Family Planning and Birth Spacing | 120 min

**SESSION OBJECTIVES**

*By the end of this session, participants will be able to:*
- Define postpartum contraception
- Explain the benefits of birth spacing
- Discuss postpartum return of fertility
- Describe the timing and initiation of key contraceptive methods
- Describe the World Health Organization’s (WHO’s) Medical Eligibility Criteria for Contraceptive Use

**Methods and Activities**

**Illustrated presentation/discussion: Postpartum family planning (60 min)**
- Ask questions of the larger group throughout the session.
- Intersperse presentation with questions, examples and discussion.
- Be sure to include:
  - Definitions
  - The situation of unmet need
  - Significance of birth spacing
  - Basic elements of PPFP
  - Return to fertility
  - Implications of / for breastfeeding
  - Medical eligibility criteria
  - PP contraceptive for the HIV-positive postpartum woman
  - Methods:
    - Non-hormonal
    - LAM
    - Condoms
    - FAM
    - Vasectomy
    - Postpartum female sterilization
    - IUDs
    - Hormonal methods
    - Withdrawal
    - Emergency contraception (EC)

**Contraceptive challenge game (30 min) – described on slides**
- Participants divide into groups of three or four.
- Each group selects a contraceptive and provides information on chosen method.
- Pictures, simulations or actual methods should be passed around for each learner to examine.

**Case study (30 min)**
- Small groups read case study and answer questions.
- Group is reassembled and answers discussed with larger group.

**Materials/Resources**
- Boxlight projector
- PowerPoint presentation
  OR
- Overhead projector with transparencies (Handouts of presentations if no electricity)
- Case Study: Postpartum Family Planning with Answer Key
- Bag that contains methods or simulations of methods: COCs, POPs, implants, IUD, condom, pictures to represent LAM, vasectomy, tubal ligation, EC
CASE STUDY: POSTPARTUM ASSESSMENT AND CARE

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group developed.

CLIENT PROFILE

Mrs. C. gave birth 2 weeks ago. Her pregnancy, labor and birth were uncomplicated. This is her first postpartum clinic visit. Mrs. C. has one other child, who is 3 years of age. She does not want to become pregnant again for at least 2 years. Mrs. C. left her baby at home with her mother-in-law, but reports that the baby is well and had a routine check-up by the midwife when the baby was 1 week old.

PRE-ASSESSMENT

1. Before beginning your assessment, what should you do for and ask Mrs. C.?

ASSESSMENT
(Information gathering through history, physical examination and testing)

2. What history will you include in your assessment of Mrs. C., and why?

3. What physical examination will you include in your assessment of Mrs. C., and why?

4. What laboratory tests will you include in your assessment of Mrs. C., and why?

DIAGNOSIS
(Interpreting information to identify problems/needs)

You have completed your assessment of Mrs. C. and your main findings include the following:

History:
- Mrs. C. is feeling well.
- Mrs. C. reports no complications or problems during this pregnancy, labor/childbirth or postpartum period. Her medical history is not significant: she is taking no medications, nor does she have any chronic conditions or illnesses.
- Mrs. C.’s first child is well and was breastfed for 6 months.
- She is exclusively breastfeeding her baby and intends to do so for at least 6 months.
- She wants to know whether she should start using contraception now, as she does not want to become pregnant again for at least 2 years.
All other aspects of her history are normal or without significance.

Physical Examination:
- Mrs. C.’s general appearance is healthy.
- Vital signs are as follows: BP is 120/76; pulse is 78 beats per minute; temperature is 37.6°C.
- Her breasts appear normal.
- Her abdominal exam is without significant findings and involution is proceeding normally.
- Her lochia is a pale, creamy brown in color.
- All other aspects of her physical examination are within normal range.

Testing:
HIV test is negative.

5. Based on these findings, what is Mrs. C.’s diagnosis (problem/need), and why?

CARE PROVISION
(Implementing plan of care and interventions)

6. Based on your diagnosis (problem/need identification), what is your plan of care for Mrs. C., and why?

EVALUATION
- Mrs. C. returns to the clinic at 6 weeks postpartum.
- She is well.
- She tells you that she is still breastfeeding exclusively/on demand and her menses have not returned.
- She also says she has decided to return to work, on a part-time basis, when her baby is 4 months of age, and will only be partially breastfeeding from then on.
- She asks whether she should start taking a contraceptive.

7. Based on these findings, what is your continuing plan of care for Mrs. C., and why?

- Mrs. C. should be provided family planning counseling, including the availability and accessibility of family planning services and methods, to enable her to make an informed choice about a method of contraception.
KNOWLEDGE ASSESSMENT: POSTPARTUM FAMILY PLANNING

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. According to DHS surveys, what percentage of women do not want another pregnancy within the 2 years after childbirth?
   a. 12–20%
   b. 42–45 %
   c. 62–67%
   d. 92–97%

2. Appropriate timing for postpartum family planning counseling includes:
   a. 6 weeks postpartum
   b. Immediate postpartum
   c. Antenatal
   d. a) and b)
   e. All of the above

3. The criteria for LAM are:
   a. Fully or nearly fully breastfeeding, less than 4 months postpartum, menses have not returned, and baby still feeds at least once during the night
   b. Fully or nearly fully breastfeeding, less than 6 months postpartum, and menses have not returned
   c. Fully or nearly fully breastfeeding, less than 4 months postpartum, and menses have not returned

4. IUDs can be inserted:
   a. Within 24 hours and after 6 weeks postpartum
   b. Within 24 hours and after 4 weeks postpartum
   c. Within 48 hours and after 4 weeks postpartum
   d. Post-placental only (within 10 minutes of delivery) and after 6 weeks postpartum

5. IUD use:
   a. Is associated with infertility
   b. Increases risk of PID
   c. Is contraindicated in any woman who is HIV+
   d. None of the above
   e. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

6. The breastfeeding woman can begin oral progestin-only pills at 6 weeks after delivery. _____

Module 13: Postpartum FP and Birth Spacing - 4
Best Practices in Maternal and Newborn Care
Learning Resource Package
7. Combined oral contraceptives can be used by non-breastfeeding women at 3 weeks postpartum.

8. IUDs and hormonal contraception may increase the risk of acquisition of HIV.

9. LAM provides 98% protection from pregnancy.

10. Fertility awareness methods (such as Standard Days Method) can be started at 6 weeks postpartum for both breastfeeding and non-breastfeeding women.

11. Vasectomy is not effective immediately, so WHO recommends use of a backup contraceptive method for 1 month after the procedure.

12. IUDs are the most cost-effective reversible method if used for 2 years or more.
Session Objectives

- Define postpartum contraception
- Explain the benefits of birth spacing
- Discuss postpartum return of fertility
- Describe the timing and initiation of key contraceptive methods
- Describe WHO’s Medical Eligibility Criteria for Contraceptive Use

Definitions

- Postpartum contraception is the initiation and use of family planning methods during the first year after delivery:
  - Post-placental – within 10 minutes after placenta delivery
  - Immediate postpartum – within 48 hours after delivery (e.g., voluntary sterilization)
  - Early postpartum – 48 hours up to 6 weeks
  - Extended postpartum – 48 hours up to 1 year after birth

Question ??

- According to DHS surveys, what percentage of women do not want another pregnancy within the 2 years after childbirth?
  - 12-20%
  - 42-45%
  - 62-67%
  - 92-97%
Unmet Need: Fertility Preferences of Postpartum Women

- According to many DHS surveys*:
  - 92–97% of women do not want another child within 2 years after giving birth
  - But 35% of women had their children spaced at 2 years apart or less
  - 40% of women who intend to use a FP method in the first year postpartum are not using one

Birth Spacing

- Time interval from one child’s birth date until the next child’s birth date
- Healthy timing and spacing of pregnancy:
  - Both infants and mothers are more likely to survive if couples space their births 3 to 5 years apart
  - This means that couples should wait 2 years after the birth of their last baby before trying to conceive


Birth Spacing Saves Mothers’ Lives

- Healthy timing and spacing of pregnancies has positive effects on maternal health and newborn outcomes
- Women who have their babies at 27- to 32-month intervals are:
  - More likely to avoid anemia
  - More likely to avoid 3rd trimester bleeding
  - More likely to survive childbirth

Contraception after Childbirth: Basic Care and Services

Basic care should include:
- Discussion of contraceptive needs:
  - Considering client’s reproductive goals
- Information and counseling about methods, their effectiveness rates, and side effects
- Short- and long-term method choices

Contraception after Childbirth: Basic Care and Services (cont.)

- Assurance of contraceptive re-supply with access to follow-up care
- Integration with other maternal-infant child care:
  - ANC and postpartum visits
  - Newborn care
  - Immunizations
- HIV/STI prevention:
  - To help clients assess their risk and make necessary changes in behavior and choose appropriate FP method

Counseling

Main goals of FP counseling:
- To help women (and couples) decide if they want to use a contraceptive method
- With the client’s permission, include partner
- Birth spacing/limiting
- If she does want contraception, to help her choose an appropriate method, taking into consideration whether or not she is breastfeeding
- To prepare her to use the method effectively
- To help the woman develop a transition plan from LAM to another method
- To discuss return to fertility

Source: Solter/Pathfinder 1998.

Return to Fertility

- During pregnancy, the cyclic function of the ovaries is suspended due to presence of placental hormones
- During early postpartum:
  - Inhibiting effects of estrogen and progesterone are removed
  - Levels of Follicle Stimulating Hormone (FSH) and Luteinizing Hormone (LH) gradually rise
  - Ovarian function begins again
Return to Fertility: Effect of Lactation

Non-lactating women:
- Will menstruate within 12 weeks
- On average, first ovulation 45 days after delivery
- Risk of pregnancy

Return to Fertility: Effect of Lactation (cont.)

Breastfeeding women:
- Period of infertility longer for exclusive or nearly exclusive breastfeeding:
  - On-demand feeding blocks ovulation
- Return to fertility not predictable
- Likelihood of menses and ovulation is low during first 6 months
- Ovulation may occur prior to menses

Breastfeeding Women

- Protected for at least 6 months if using LAM:
  - Fully or nearly fully breastfeeding
  - Less than 6 months postpartum
  - Menses has not returned
- Protected up to 6 weeks if not using LAM:
  - At 6 weeks can use combined methods
  - At 6 weeks can use progestin only methods safely or TL
- All non-hormonal methods are safe for mother and baby
- Can use IUD

When to Introduce Methods in Breastfeeding Women

<table>
<thead>
<tr>
<th>@Deliv.</th>
<th>LAM</th>
<th>COC</th>
<th>POC</th>
<th>IUD</th>
<th>BTL</th>
<th>Condoms</th>
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</table>
Non-Breastfeeding Women

- Contraception should be started at the time of or before first intercourse
- Combined hormonal methods should not be used until after 3 weeks postpartum

When to Start Contraception

Timing depends on:
- Breastfeeding status
- Method of choice
- Reproductive goals

Medical Eligibility Criteria for Contraceptive Use (MEC)

- Covers 17 contraceptive methods, 120 medical conditions
- Addresses who can use contraceptive method based on medical methods
- Gives guidance to providers for clients with medical problems or other special conditions

Purpose of the Medical Eligibility Criteria (MEC)

- To guide family planning practices based on the best available evidence
- To address and change misconceptions about who can and cannot safely use contraceptive methods
- To reduce medical policy and practice barriers (i.e., not supported by evidence)
- To improve quality, access and use of family planning services

### What is answered by the MEC?

Identifies which contraceptive or family planning method can be safely used in the presence of a given individual characteristic or medical condition.

### WHO Medical Eligibility Criteria Classification Categories

<table>
<thead>
<tr>
<th>Classification</th>
<th>With clinical judgment</th>
<th>With limited clinical judgment</th>
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<tbody>
<tr>
<td>1</td>
<td>Use method in any circumstances</td>
<td>Yes Use the method</td>
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<tr>
<td>2</td>
<td>Generally use; advantages outweigh risks</td>
<td>Yes Use the method</td>
</tr>
<tr>
<td>3</td>
<td>Generally do not use; risks outweigh advantages</td>
<td>No Do not use the method</td>
</tr>
<tr>
<td>4</td>
<td>Method not to be used</td>
<td>No Do not use the method</td>
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</table>

### Postpartum Contraception for HIV-Positive Women

- Important information for HIV+ women:
- Correct and consistent use of male and female condoms can reduce risk of STI/HIV transmission
- Using another contraception in addition to a condom (dual method use) reduces the chance of pregnancy, thus avoiding mother-to-child transmission

### Summary – Contraception and HIV Acquisition

- Male condoms proven effective; female condoms’ effectiveness may be similar to male condoms
- Spermicides (N-9) not effective against HIV:
  - N-9 in WHO MEC is category 4 for HIV-positive people
- IUDs and hormonals do not increase HIV acquisition from findings of observational studies
### Integration of HIV with FP
- HIV prevention should be an integral part of FP services to help clients assess their risk and make necessary changes in behavior.
- FP providers should encourage clients to seek VCT to prevent HIV transmission to partners, to improve quality of life if HIV-positive, and to prevent HIV transmission to future children.

### Postpartum FP and HIV
- HIV-positive women who are not breastfeeding need a family planning method immediately.
- HIV-positive women who are breastfeeding may practice LAM, but will need to choose another method at 6 months when they stop breastfeeding.
- Counsel all women (even when status is unknown) about the importance of postpartum FP:
  - Significance of safer sex and dual protection
  - Available contraceptive choices
  - Healthy timing and spacing if future pregnancy desired
  - Surgical contraception if no future pregnancy desired

### Contraceptive Challenge Game
- Divide participants into groups of 3 or 4.
- One representative from each group closes her/his eyes and reaches into a bag that contains small envelopes that contain one contraceptive method [COCs, POPs, condom, IUD, implant, a picture of breastfeeding (for LAM), a picture of a man (for vasectomy), and a representative picture for tubal ligation], and selects one.

### Contraceptive Challenge Game (cont.)
- For the contraceptive chosen, each group must tell: advantages, disadvantages, timing and breastfeeding considerations.
- Groups that provide correct information get a small prize or an applause.
- After information is given for each method, those that are actual contraceptives are passed around the room for each learner to handle/examine.
Non-Hormonal Methods

- Non-hormonal methods:
  - LAM
  - Barrier methods
  - Periodic abstinence (fertility awareness, SDM)
  - Male and female sterilization
  - IUDs (Copper)

All non-hormonal contraceptive methods can be used safely by breastfeeding women.

What is the Lactational Amenorrhea Method (LAM)?

- Exclusively or nearly exclusively breastfeeding:
  - On demand around the clock feeding (every 2–3 hours)
  - No supplemental infant feeding
- Menses has not returned
- Less than 6 months postpartum
- If any of these three factors change, FP is needed to prevent pregnancy
- Begin planning for FP method to transition to at 6 months

Lactational Amenorrhea Method

For women who exclusively breastfeed:
- Fertility is delayed during the first 6 months postpartum
- More than 98% protection from pregnancy
- Effective, safe contraception suitable for most women:
  - Non-hormonal
  - Non-invasive
- Can be used as a transitional method until couple decides on or meets criteria for another method
- Can be used by HIV+ mothers in addition to condoms; LAM is consistent with WHO guidelines for HIV+ women

Transition from LAM...

- Before 6 months:
  - Assist the woman in planning for transition to another FP method post LAM
- At 6 months or when any one of the criteria is not met, women will need to begin another FP method:
  - At 6 months:
    - Weaning from exclusive breastfeeding often starts
    - Less suckling/less prolactin—ovulation no longer inhibited
    - Menses and ovulation more likely
Advantages of LAM

- Breastfeeding practices required by LAM have other health benefits for mother and baby:
  - Bonding, protects baby from diseases, healthiest food for baby, etc.
- Universally available
- Can be used immediately after childbirth
- No supplies or procedures needed
- Bridge to other contraceptives
- No hormonal side effects

Disadvantages of LAM

- No protection against STIs
- Effectiveness after 6 months uncertain
- Exclusive breastfeeding may not be convenient for some women
- Small chance of MTCT during breastfeeding if mother is HIV-positive

Barrier Methods: Condoms

- When used consistently and correctly, male condoms are highly effective against pregnancy and STIs/HIV
- A latex sheath or covering made to fit over erect penis
- 97% effective in preventing pregnancy when used correctly every time

Advantages of Condoms

- Prevent STIs, including HIV/AIDS as well as pregnancy when used correctly and with each act of intercourse
- Can be used soon after childbirth
- No hormonal side effects
- Can be stopped any time
- No need for health provider or clinic visit
- Usually easy to obtain and sold in many places
- Anyone can use if not allergic to latex
Disadvantages of Condoms

- A man’s cooperation is needed
- May decrease sensation
- Poor reputation—associated with immoral sex, extra-marital sex or prostitution
- May be embarrassing/uncomfortable to purchase or ask partner to use
- Can be weakened if stored too long, in too much heat or humidity, or if used with oil-based lubricants—may break during use
- Some men or women may be allergic to latex

Fertility Awareness Methods

- Based on awareness of or ability to determine fertile time of menstrual cycle
- Include:
  - Basal body temperature/cervical secretions
  - Calendar calculations
  - Standard Days Method (SDM)
    - Cycle beads
  - Periodic abstinence during fertile period

Fertility Awareness Methods/SDM

- Advantages:
  - Inexpensive
  - Not necessary to acquire supplies at clinic/ dispensary
- Disadvantages:
  - Most methods unreliable in postpartum women
  - Postpartum women, especially when breastfeeding, need to have 4 menstrual cycles, the most recent cycle is 26 to 32 days long
  - Partner’s cooperation needed in periodic abstinence

Male Sterilization: Vasectomy

- A safe, convenient, highly effective and simple form of contraception for men that is provided under local anesthesia in an out-patient setting
- Vasectomy is safer, simpler, less expensive and equally effective as FS (tubal ligation)
- Vasectomy is popular in the US and UK

Source: www.marxweb.org/Technical briefs.
### Male Sterilization: Vasectomy (cont.)

- Not effective until after 3 months
- Can be timed to coincide with the postpartum period when fertility is reduced:
  - Ideal with LAM
  - If not using LAM, couple will need to use another contraceptive method during the first 12 weeks
- Follow local protocols for counseling couples in advance and obtaining informed consent

### Male Sterilization: Vasectomy (cont.)

- Highly effective in preventing pregnancy (99.6 to 99.8% effective)
- Comparable to FS, implants, IUDs in preventing pregnancy
- Not effective immediately—WHO recommends use of backup contraception for 3 months after the procedure

### Vasectomy: Safety

- Very safe, with few medical restrictions
- Major morbidity and mortality rare
- Adverse long-term effects not been found
- Minor complications (e.g., infection, bleeding, post-operative and/or chronic pain 5–10%)
- No-scalpel (NSV) technique has lower incidence of bleeding and pain than incisional technique
- Morbidity and mortality rare

### Vasectomy: Crucial Programmatic Facts

- Men in every region, cultural, religious and SE setting show interest in vasectomy, despite common assumptions about negative male attitudes or societal prohibitions (MAQ)
- However, men often lack full access to information and services, especially male-centered programming, which has been shown to result in greater uptake of vasectomy
**Postpartum Female Sterilization**

- Ideally done within 48 hours after delivery
- May be performed immediately following delivery or during C/section
- If not performed within 1 week of delivery, delay for 4–6 weeks
- Follow local protocols for counseling clients and obtaining informed consent in advance:
  - Discuss during ANC

**Female Sterilization: Effectiveness**

- Highly effective, 99.5% comparable to vasectomy, implants, IUDs
- Risk of failure (pregnancy), while low:
  - Continues for years after the procedure
  - Does not diminish with time
  - Is higher in younger women
- No medical condition absolutely restricts a person’s eligibility for FS

**IUD**

- IUDs are among the most reliable and cost-effective long-acting method of contraception available to women today. The IUD offers a level of protection comparable to female sterilization with the added advantage of easy and rapid reversibility.
- The IUD prevents pregnancy by preventing fertilization; the mechanism of action of copper IUDs is spermicidal. Copper causes a sterile body inflammatory reaction resulting in biochemical and cellular changes that are toxic to sperm in the uterine cavity, rendering the sperm incapable of fertilization.

**IUDs (Cu-T)**

- IUDs can be inserted:
  - Immediately after delivery of the placenta
  - During C/section
  - Within 48 hours of childbirth
- If not inserted within 48 hours, insertions should be delayed for 4–6 weeks
- Expulsion rates can be higher than with interval insertions:
  - Some studies show that insertion within 10 minutes of placenta delivery is better than other times before hospital discharge
  - High fundal placement has lower expulsion rates
Importantly Programmatic Characteristics of IUDs

- Effectiveness is comparable to FS
  - 12–13 yrs with CU-T (approved)
  - Cheaper to provide than other methods
  - Quickly and completely reversible
- Very safe for most women (including immediately postpartum, postabortion, or interval; breastfeeding; young; and nulliparas)

IUDs: Programmatic Considerations

- More service cadres can provide (because it is non-surgical)
- Choice: Long-acting methods that can be used long-term, non-permanent; providing a woman with a PPIUD prior to discharge is less than half as expensive as providing in outpatient settings
- Good option for HIV+ women
- Most cost-effective method of all reversible methods if used for 2 or more years

Dispelling Myths about IUDs

IUDs:
- Do not cause abortion
- Do not cause infertility
- Are unlikely to cause discomfort for male partner
- Do not travel to distant parts of the body
- Are not too large for small women
- May offer protection against endometrial and cervical cancer

Common Concerns about IUDs: New Information

- Pelvic Inflammatory Disease (PID)
- Infertility
- HIV/AIDS
Medical Evidence: Low PID Rates and Infertility among IUD Users

- First 20 days: highest risk due to insertion
- Beyond 20 days: PID risk is same as if no IUD:
  - 99.8% of women with IUDs have no problems with PID
- IUD use NOT associated with infertility:
  - The real culprit is chlamydia trachomatis (and GC), not the IUD!

IUD Use and HIV: Three Main Questions

- Does IUD increase risk of HIV acquisition by the woman using it?  
  - NO
- Does use of IUD by HIV-infected women increase their other health risks? 
  - NO
- Does the HIV-infected IUD user increase risk to sero-negative male partner? 
  - NO

IUD Use and HIV: Three Main Questions (cont.)

WHO Medical Eligibility Criteria: HIV/AIDS and Copper IUDs

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<th>3rd Ed 2004 Category</th>
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<td>2</td>
</tr>
<tr>
<td>HIV-infected</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>AIDS</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Clinically well on ARV therapy</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
Cu-IUD Side Effects

- Heavier menses in the first few months
- Increased cramping and menstrual pattern changes in the first few months
- Low expulsion rate, when occurring usually within the first 3 months

Summary: IUD

- Comparable in safety, effectiveness to FS
- Can be inserted during the postpartum period
- Risk of PID very small, even in high STI settings
- Does not increase risk of infertility
- Safe for women with no children
- Safe (and a good choice) for HIV-infected women or women with AIDS doing well on ARVs and who do not desire pregnancy

Hormonal Methods

- Progestin-only contraceptives:
  - Implants
  - Injectables
  - Progestin-only pills (POPs)
- Combined estrogen-progestin methods:
  - Combined oral contraceptives (COCs)
  - Monthly injectables (Mesigyna, Cyclofem)

Question ??

When can a breastfeeding woman begin using a progestin-only contraceptive?
### Progestin-Only Contraceptives: Breastfeeding Women

- No effect on breastfeeding, breast milk production or infant growth and development
- WHO recommends a delay of 6 weeks after childbirth before starting progestin-only methods as infants may be at risk of exposure to the progestin

### Implants

- **Norplant (not produced since 2006):**
  - 6 capsules, effective 7 years
  - 1-year failure rate 0.05% (1 pregnancy/2,000 users)
  - 5-year failure rate 1.6%
- **Jadelle:**
  - 2 rods, effective 5 years
  - 1-year failure rate 0.05%; 5-year failure rate 1.1%
- **Implanon:**
  - 1 rod, effective 3 years; with failure rate 0.07/100 ♀ years (<1%)

### Questions ??

- When can a breastfeeding woman begin using a combined (estrogen-progestin) contraceptive?
- When can a non-breastfeeding woman begin using a combined (estrogen-progestin) contraceptive?

### Progestin-Only Injectable

- Safe to use immediately PP if not breastfeeding
- Safe to use after 6th week postpartum if breastfeeding
- Injection of:
  - 150 mg DMPA IM every 3 mos.
  - 104 mg DMPA subQ every 3 months
  - NET EN 200mg every 2 months
- Women of any age and parity can use it (MEC Cat. 1, age 18–45)
- Safe to use immediately PAC
**Combined Estrogen-Progestin Methods: Breastfeeding Women**

- **DO NOT use within the first 6 weeks postpartum**
- **NOT recommended during first 6 months postpartum due to diminished quantity of breast milk, decreased duration of lactation and possible adverse affects on infant growth**


**Combined Estrogen-Progestin Methods**

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<tr>
<th>Breastfeeding</th>
<th>Non-breastfeeding</th>
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<tr>
<td><strong>DO NOT use combined estrogen-progestin methods within the first 6 weeks postpartum</strong></td>
<td><strong>NOT recommended to use combined estrogen-progestin methods during the first 3 weeks postpartum</strong></td>
</tr>
<tr>
<td><strong>NOT recommended during the first 6 months postpartum</strong></td>
<td><strong>Safe to start after 3 weeks post-delivery</strong></td>
</tr>
</tbody>
</table>

**Women Eligible for COCs without Restriction**

- **Examples:**
  - Adolescents
  - Nulliparous women
  - Postpartum (3 weeks, if not breastfeeding)
  - Immediately postabortion
  - Women with varicose veins
  - Any weight (including obese)


**Women Who Should Not Use COCs**

- Breastfeeding (<6 weeks postpartum)
- Smoke heavily AND are over age 35
- At increased risk of cardiac valvular disease
- Have certain pre-existing conditions (e.g., breast cancer, liver disease, high risk of CV disease)
- Pregnant (but no proven negative effects on fetus if taken accidentally)
## Emergency Contraception

- Methods of preventing pregnancy after unprotected sexual intercourse
- Regular birth control pills used in a special higher dosage:
  - ECPs are a higher dosage of the same hormones found in daily birth control pills
  - Within 120 hours (5 days) of unprotected sex (but as soon as possible after unprotected sex)
- IUDs can also be used 5 days after unprotected sex
- Distinct from RU-486 (The Abortion Pill)
- Millions of unintended pregnancies and abortions could be averted with EC

## Types of ECPs

- Progestin-only OCs – levonorgestrel-only, in preferred regimen one dose of 1.5 mg (or can be in 2 doses of 0.75mg, 12 hrs apart)
  - →88% reduction in risk (1/100 will get pregnant)
- Combined OCs: 2 doses of pills containing ethinyl estradiol (100 mcg) and levonorgestrel (0.5 mg) taken 12 hrs apart
  - →75% reduction in risk (2/100 will get pregnant)

## Question ??

Within what time after intercourse will emergency contraceptive be effective?

## ECP Effectiveness and Time

- ECPs are effective up to 120 hours (5 days), and thought to be slightly more effective during first 24 hours.
- This offers providers and women more flexibility of use, particularly when ECPs are not given in advance of need.
Possible Mechanisms of Action of ECPs

- Inhibit or delay ovulation
- Affect sperm and ovum function
- Prevention of implantation is an unlikely effect

EC pills do not interrupt an established pregnancy

Withdrawal (Coitus Interruptus)

- A traditional family planning method in which the man completely removes his penis from the vagina, and away from the external genitalia of the female partner, before he ejaculates
- CI prevents sperm from entering the woman’s vagina, thereby preventing contact between spermatozoa and the ovum

CI: Effectiveness

- When used perfectly, effectiveness can be as high as 95%
- With typical usage, effectiveness about 75–81%
- However, CI is better than no method at all!

CI or Withdrawal (cont.)

This method may be appropriate for postpartum women and couples:
- Who are highly motivated and able to use this method effectively
- With religious or other reasons for not using other methods of contraception
- Who need contraception immediately and have entered into a sexual act without alternative methods available
- Who need a temporary method while awaiting the start of another method
- Who have intercourse infrequently
Advantages of CI

- If used correctly, does not affect breastfeeding and is always available for primary use or use as a back-up method
- Involves no economic cost or use of chemicals
- No health risks associated directly with CI:
  - Men and women who are at high risk of STI/HIV infection should use a condom with each act of intercourse

Disadvantages of CI

- Does not provide protection against STIs
- Requires the man’s self control
- May reduce the pleasure of intercourse
- During withdrawal, some sperm may have already entered into the woman’s vagina

To save lives, parents should wait until their baby is 2 years old before they try to get pregnant again

References


References (cont.)


References (cont.)


Web Sites:

Other Helpful Resources

- http://www.reproline.jhu.edu/
- http://www.maqweb.org/iudtoolkit/
## SESSION TOPIC  TIME

<table>
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<tr>
<td>Best Practices in Preventing Mother-to-Child Transmission of HIV</td>
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### SESSION OBJECTIVES

By the end of this session, participants will be able to:
- Discuss best practices for antenatal, intrapartum and postpartum care of the HIV-positive mother to reduce mother-to-child transmission
- Describe the evidence supporting these practices

### Methods and Activities

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<tr>
<td>PowerPoint presentation</td>
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<tr>
<td>OR</td>
</tr>
<tr>
<td>Overhead projector with transparencies (Handouts of presentations if no electricity)</td>
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<tr>
<td>AFASS criteria handout</td>
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</tbody>
</table>

### Illustrated presentation/discussion: Best practices in preventing mother-to-child transmission (PMTCT) of HIV (45 min)

- Use questioning of group to draw out knowledge and experience of participants. (Suggested questions provided in PowerPoint presentation.)
- Discuss issues that arise during presentation and questioning.
- Be sure to include:
  - Counseling issues
  - WHO's four-prong approach to PMTCT
  - Timing of transmission
  - Effects of HIV on mother and baby
  - Risk factors for MTCT
  - Counseling points
  - Antenatal care interventions to reduce MTCT
  - Interventions during labor and childbirth to reduce MTCT
  - ARVs
  - Breastfeeding issues and recommendations
  - Immediate care of the newborn whose mother is HIV-positive
  - PP family planning for the HIV-positive mother

### Small group case study (45 min)

- Divide participants into groups of four to discuss questions in case study.
- Reassemble group and discuss answers to case study questions.

May incorporate content into Focused Antenatal Care Practice.
CASE STUDY: ANTENATAL ASSESSMENT AND CARE

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group developed.

CLIENT PROFILE

Mrs. C., a 27-year-old gravida 3/para 2, presents for her second, regularly scheduled antenatal care visit at 26 weeks’ gestation. Her first visit was at 16 weeks. At that time, Mrs. C. chose not to be tested for HIV, a test that is recommended for all pregnant women. Her other laboratory tests were normal. She lives with her husband and children in a suburb of the capital city of a country where the prevalence of HIV infection in pregnant women has increased over the past few years. You note that she looks anxious and unhappy.

PRE-ASSESSMENT

1. Before beginning your assessment, what should you do for and ask Mrs. C.?

ASSESSMENT
(Information gathering through history, physical examination, and testing)

2. What history will you include in your assessment of Mrs. C., and why?

3. What physical examination will you include in your assessment of Mrs. C., and why?

4. What laboratory tests will you include in your assessment of Mrs. C., and why?

DIAGNOSIS
(Interpreting information to identify problems/needs)

You have completed your assessment of Mrs. C. and your main findings include the following:

History:

● During the first antenatal visit, all aspects of Mrs. C.’s history were normal, except that she opted out of HIV testing.

● During this visit, when you ask whether there is anything worrying her or anything that she would like to talk about, she reports that:
  ● She is very concerned about her family history of HIV: Her brother-in-law has AIDS and his wife and their youngest child are both HIV-positive.
• She felt embarrassed to talk about this with you at her first antenatal visit, even though you provided an opportunity for her to do so when you asked about her HIV status, offered HIV testing, and provided HIV counseling.

• She knows that her husband has sexual relations with at least one other woman; however, he refuses to use a condom during intercourse with his wife. Mrs. C. has no sexual partners other than her husband.

• She is very distraught, as she fears that she may be HIV-positive.

• During this visit, all other aspects of Mrs. C.’s history are normal.

Physical Examination:
• During the first antenatal visit, all findings on physical examination were within normal range.

• During this visit, all findings on physical examination are within normal range.

Testing:
• During the first antenatal visit, she “opted out” of HIV testing; all other test results were normal as mentioned above in client profile:
  • Hemoglobin 11 gm/dL
  • RPR non-reactive
  • Blood type O, Rh positive

5. Based on these findings, what is Mrs. C.'s diagnosis (problem/need) and why?

CARE PROVISION
(Implementing plan of care and interventions)

6. Based on your diagnosis (problem/need identification), what is your plan of care for Mrs. C., and why?

EVALUATION
• Mrs. C. agreed to HIV testing on her last visit and now comes back to see you with the result of her HIV test, which is positive. Her tests for gonorrhea and chlamydia were negative.

• She tells you that some counseling was provided at the testing site, which was helpful, but she wants to discuss her situation further with you.

• She is very distraught.

7. Based on these findings, what is your continuing plan of care for Mrs. C.?
DESCRIPTION OF THE AFASS CRITERIA

ACCEPTABLE: The mother perceives no barrier to replacement feeding. Barriers may have cultural or social reasons, or be due to fear of stigma or discrimination. According to this concept, the mother is under no social or cultural pressure not to use replacement feeding, and she is supported by family and community in opting for replacement feeding, or she will be able to cope with pressure from family and friends to breastfeed, and she can deal with possible stigma attached to being seen with replacement food.

FEASIBLE: The mother (or family) has adequate time, knowledge, skills and other resources to prepare the replacement food and feed the infant up to 12 times in 24 hours. According to this concept the mother can understand and follow the instructions for preparing infant formula and with support from the family can prepare enough replacement feeds correctly every day, and at night, despite disruptions to preparation of family food or other work.

AFFORDABLE: The mother and family, with community or health-system support if necessary, can pay the cost of purchasing/producing, preparing and using replacement feeding, including all ingredients, fuel, clean water, soap and equipment, without compromising the health and nutrition of the family. This concept also includes access to medical care if necessary for diarrhea and the cost of such care.

SUSTAINABLE: A continuous and uninterrupted supply and dependable system of distribution for all ingredients and products needed for safe replacement feeding, for as long as the infant needs it, up to one year of age or longer, are available. Also, the mother and family are reasonably certain that they will be able to pay the costs cited under “Affordable” for as long as the infant needs replacement feeding.

SAFE: Replacement foods are correctly and hygienically prepared and stored, and fed in nutritionally adequate quantities, with clean hands and using clean utensils, preferably by cup. This concept means that the mother or caregiver:

- Has access to a reliable supply of safe water (from a piped or protected-well source)
- Prepares replacement feeds that are nutritionally sound and free of pathogens
- Is able to wash hands and utensils thoroughly with soap, and to regularly boil the utensils to sterilize them
- Can boil water for preparing each of the baby’s feeds
- Can store unprepared feeds in clean, covered containers and protect them from rodents, insects and other animals.

KNOWLEDGE ASSESSMENT: PREVENTING MOTHER-TO-CHILD TRANSMISSION OF HIV

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. A key risk factor for mother-to-child transmission of HIV is:
   a. High viral load of the mother
   b. Advanced age of the mother
   c. Parity of the mother

2. Some intrapartum interventions to reduce the risk of MTCT include:
   a. Using good infection prevention measures
   b. Avoiding artificial rupture of membranes and unnecessary trauma
   c. Avoiding prolonged rupture of membranes
   d. a) and b)
   e. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

3. Counseling to prevent acquiring HIV is important for HIV-negative women but not for HIV-positive women. _____

4. ARVs should be provided during pregnancy for the health of the baby but not for the mother. _____

5. There is no evidence of increased MTCT from vaginal rather than C-section delivery if appropriate ARVs are used and the viral load is controlled. _____

6. MTCT is less likely if exclusive breastfeeding rather than mixed feeding is used. _____

7. For HIV survival, all women for whom replacement feeding is not acceptable, feasible, affordable, sustainable and safe (AFASS) should be encouraged to exclusively breastfeed their infant for 6 months. _____
Best Practices in Preventing Mother-to-Child Transmission of HIV

**Best Practices in Maternal and Newborn Care**

**Session Objectives**
- To discuss best practices for antenatal, intrapartum and postpartum care of the HIV-positive mother to reduce mother-to-child transmission
- To describe the evidence supporting these practices

**HIV-Related Counseling Issues during Pregnancy**
- Educate/counsel regarding HIV and pregnancy:
  - Impact of HIV on pregnancy and pregnancy on HIV
  - Maternal health
  - Long-term health of mother and care for children
  - Perinatal transmission
  - Use of antiretrovirals and other drugs in pregnancy
- Counseling before pregnancy is important:
  - However, antenatal care may provide the first opportunity for education and counseling regarding HIV

**WHO’s Four-Prong Approach to PMTCT**

1. **Primary prevention of HIV**
   - Uninfected Parents to be

2. **Prevention of unintended pregnancy**
   - HIV-infected woman

3. **Prevention of MTCT**
   - Pregnant HIV-infected woman

4. **Linkage to Care and Support**
   - HIV-infected infant
   - AIDS and Death
Question ??

When does most transmission of HIV from mother to child occur?

Timing of Mother-to-Child Transmission of HIV

- During pregnancy (5-10%)
- During labor and delivery (10-20%)
- During breastfeeding (5-10%)

Question ??

What are some of the effects of HIV infection in the mother on the pregnancy and health of the newborn?

Adverse Pregnancy Outcomes and Relationship to HIV Infection

<table>
<thead>
<tr>
<th>Pregnancy Outcome</th>
<th>Relationship to HIV Infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous abortion</td>
<td>Limited data, but evidence of possible increased risk</td>
</tr>
<tr>
<td>Stillbirth</td>
<td>No association noted in developed countries; evidence of increased risk in developing countries</td>
</tr>
<tr>
<td>Perinatal mortality</td>
<td>No association noted in developed countries, but data limited; evidence of increased risk in developing countries</td>
</tr>
<tr>
<td>Newborn mortality</td>
<td>Limited data in developed countries; evidence of increased risk in developing countries</td>
</tr>
<tr>
<td>Intrateruterine growth restriction</td>
<td>Evidence of possible increased risk</td>
</tr>
</tbody>
</table>

Adverse Pregnancy Outcomes and Relationship to HIV Infection - 2

<table>
<thead>
<tr>
<th>Pregnancy Outcome</th>
<th>Relationship to HIV Infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low birth weight</td>
<td>Evidence of possible increased risk</td>
</tr>
<tr>
<td>Preterm delivery</td>
<td>Evidence of possible increased risk, especially w/ more advanced disease</td>
</tr>
<tr>
<td>Pre-eclampsia</td>
<td>No data</td>
</tr>
<tr>
<td>Gestational diabetes</td>
<td>No data</td>
</tr>
<tr>
<td>Amnionitis</td>
<td>Limited data; more recent studies do not suggest an increased risk; some earlier studies found increased histologic placental inflammation, particularly in those with preterm deliveries</td>
</tr>
<tr>
<td>Oligohydramnios</td>
<td>Minimal data</td>
</tr>
<tr>
<td>Fetal malformation</td>
<td>No evidence of increased risk</td>
</tr>
</tbody>
</table>


Risk Factors for MTCT

Viral
- Viral load (the higher the viral load, the greater the risk of HIV transmission)
- Viral genotype and phenotype
- Viral resistance

Maternal
- Maternal immunological status
- Maternal nutritional status
- Maternal clinical status (including co-infection with an STI)
- Behavioral factors
- Antiretroviral treatment

Risk Factors for MTCT (cont.)

Obstetrical
- Prolonged rupture of membrane (longer than 4 hours)
- Mode of delivery
- Intrapartum hemorrhage
- Obstetrical procedures
- Invasive fetal monitoring

Fetal
- Prematurity
- Genetic
- Multiple pregnancy

Infant
- Breastfeeding
- Gastrointestinal tract factors
- Immature immune system

Question ??

What points are important when counseling an HIV-positive pregnant woman?
Counseling HIV-Positive Pregnant Women

- Effect of pregnancy on HIV infection
- Effect of HIV on pregnancy outcome
- Risk of transmission to fetus and infant
- Treatment options in pregnancy
- Interventions to prevent mother-to-infant transmission
- Infant feeding options
- Disclosure of results to partner
- Need for follow-up of mother and child
- Future fertility and contraceptive options

Antenatal Care

- ANC allows interaction between the health facility and sexually active women to:
  - Provide information on HIV
  - Promote safer sex practices
  - Provide opportunity for the pregnant woman to know her HIV status
  - Reduce social stigmatization
  - Identify and treat STIs
  - Provide malaria prophylaxis (IPT)
- Provides opportunities to discuss the interventions for reducing the risk of MTCT

Question ??

What measures can you take during antenatal care (ANC) of an HIV-positive woman to reduce the risk of transmission of HIV?

Antenatal Interventions to Reduce MTCT

- HIV testing and counseling services
- Behavior change communication:
  - Sexual
  - Injection drug use
  - Alcohol use and smoking
- Prevention of new infections in pregnancy
- Identification and treatment of STIs (genital ulcers and abnormal vaginal discharge)
Antenatal Interventions to Reduce MTCT (cont.)

- Prevention and treatment of anemia (balanced diet and nutritional supplementation)
- Avoiding invasive testing procedures in pregnancy:
  - Amniocentesis
  - Chorionic villus sampling
  - Cordocentesis
  - External cephalic version

- Antenatal Interventions to Reduce MTCT (cont.)

- Antiretroviral prophylaxis:
  - During pregnancy
  - In labor
  - Postpartum
- (ARVs should be provided to the mother for her health as well as for the health of the baby)
- Physical examination to detect any signs of HIV-related illness

- Antenatal Interventions to Reduce MTCT (cont.)

- Iron and folate
- Multivitamin supplementation
- Tetanus toxoid immunization
- Intermittent preventive treatment (IPT) with sulfadoxine-pyrimethamine (SP) for malaria, in endemic areas, as per WHO recommendations

- Antenatal Interventions to Reduce MTCT (cont.)

- Mebendazole at first visit in areas of high worm prevalence
- Isoniazid (INH) prophylaxis for tuberculosis (TB) if indicated
- Pneumocystis carinii pneumonia (PCP) prophylaxis, in women with clinical signs of AIDS or CD4 counts of below 200 mm3
- Psychological support
Case Study

- Divide participants into groups of four
- Provide case study on PMTCT during ANC
- Each group should discuss and record answers to questions
- Following group work, reassemble group for discussion of answers

Question ??

What measures can you take during labor and delivery to reduce the risk of transmission of HIV?

Intrapartum Interventions to Reduce MTCT

- Use of universal IP precautions
- Application of good infection prevention practices during pelvic examinations and delivery
- Avoiding unnecessary artificial rupture of membranes
- Avoiding prolonged labor and prolonged rupture of membranes

Intrapartum Interventions to Reduce MTCT (cont.)

- Avoid unnecessary trauma during delivery:
  - Unnecessary episiotomy
  - Fetal scalp electrode monitoring
  - Forceps delivery
  - Vacuum extraction
**Vaginal vs. Caesarean**

<table>
<thead>
<tr>
<th>Risk Concern</th>
<th>Vaginal</th>
<th>Cesarean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood loss</td>
<td>-</td>
<td>Increased ↑</td>
</tr>
<tr>
<td>Infection</td>
<td>-</td>
<td>Increased in HIV+ women; antibiotic prophylaxis recommended ↑</td>
</tr>
<tr>
<td>MTCT</td>
<td>No evidence of increased MTCT with ARV Rx and adequate viral load</td>
<td>Reduces risk of MTCT if performed before labor onset ↓</td>
</tr>
<tr>
<td>Mortality</td>
<td>-</td>
<td>Increased ↑</td>
</tr>
<tr>
<td>Resource issues</td>
<td>-</td>
<td>Requires greater resources (supplies, equipment, staff) ↑</td>
</tr>
</tbody>
</table>

**Intrapartum Interventions to Reduce MTCT (cont.)**

- Minimize risk of PPH (to protect mother’s health and decrease provider exposure to blood):
  - Active management of 3rd stage:
    - Administer oxytocin immediately after delivery
    - Controlled cord traction
    - Uterine massage
  - Repair any genital tract lacerations
  - Carefully remove all products of conception

**Eligible Women Remain on Therapy**

Women who are eligible for ARV therapy should be on, and should remain on, this therapy throughout pregnancy

**Effective ARV for Mother Who Is not Eligible for ARVs**

- **Antenatal:**
  - AZT from 28 weeks of pregnancy, plus
  - AZT and 3TC + Sd-NVP intrapartum, plus
  - AZT and 3TC for 7 days postpartum

AZT = zidovudine  
3TC = lamivudine  
Sd-NVP = single dose nevirapine

ARV for the Newborn

For 7 days:
- Sd-NVP, plus
- AZT

If the mother receives less than 4 weeks of AZT during pregnancy, the newborn should have 4 weeks rather than 1 week of AZT


When no ARV before Labor

- When delivery occurs within 2 hours of a woman’s taking Sd-NVP, the infant should receive Sd-NVP immediately after birth and AZT for 4 weeks
- To reduce NVP resistance, the mother should receive a nucleoside reverse transcriptase inhibitor (NRTI), such as AZT and 3TC, for 7 days postpartum if she receives Sd-NVP during labor


ARVs are not only for the baby!

In settings where ARVs are available for the treatment of the mother, these should be given according to local protocol

Infant Feeding Options for the HIV Infected Mother

"A little bit of this and a little bit of that is not best for the baby!"

Avoid mixed feeding!
Breastfeeding

- For HIV survival, all women for whom replacement feeding is not acceptable, feasible, affordable, sustainable and safe (AFASS) should be encouraged to exclusively breastfeed their infant for 6 months
- Exclusive breastfeeding should be encouraged among all women, regardless of HIV status
- A woman should be supported in her infant feeding decision; the choice is hers

Ongoing Care

All HIV infected mothers should be linked to care and support to help keep them in the best health possible

Newborn

- Handle with gloves until maternal blood and secretions have been washed off
- Wash newborn after birth, especially face
- Avoid hypothermia
- Give antiretroviral agents, if available
- Watch for anemia
- Follow up infant for infection
Immediate Care of the Neonate

- Cut cord under cover of a lightly wrapped gauze swab, to prevent blood spurting
- Handle all babies, regardless of the mother’s HIV status, with gloves until maternal blood and secretions are washed off
- All babies, irrespective of HIV status, should be kept warm post-delivery

Immediate Care of the Neonate (cont.)

- Do not suction the newborn with a nasogastric (NG) tube unless there has been meconium-stained liquid. Where suctioning is required:
  - Use a mechanical suction unit (at a pressure below 100mm Hg) or bulb suction, if possible, rather than the mouth operated suction. Do not use the bulb syringe for another baby.
  - Attach the baby to the mother’s breast only if the mother has made a prior decision to breastfeed.

Immediate Care of the Neonate (cont.)

- If the mother has decided not to breastfeed, place the baby on the mother’s body for skin-to-skin contact. Provision should be made to provide the mother with infant formula.
- Vitamin K should be administered as per national guidelines.
- BCG should be administered according to the national/WHO immunization guideline.
- Antibiotic or 1% silver nitrate eye ointment should be administered as prophylaxis against ophthalmia neonatorum according to the national/WHO immunization guideline.

Question?

What breastfeeding issues must be considered when helping an HIV-positive mother to decide whether or not to breastfeed?
### Breastfeeding Issues

- Warmth for newborn
- Nutrition for newborn
- Protection against other infections
- Risk of HIV transmission
- Contraception for mother
- AFASS - the mother who is infected with HIV should breastfeed unless replacement feeding is acceptable, feasible, affordable, safe and sustainable (AFASS)

### Breastfeeding Recommendations

If the woman is:

- HIV-negative or does not know her HIV status, promote exclusive breastfeeding for 6 months
- HIV-positive, meets AFASS criteria, and chooses to use replacement feedings, counsel on the safe and appropriate use of formula
- HIV-positive and chooses to breastfeed, promote exclusive breastfeeding for 6 months

### Goals of FP for HIV-Infected Women

- Prevention of unintended pregnancy
- Appropriate child spacing to reduce maternal and infant morbidity and mortality

### Special Considerations for Choosing FP Method

- Effectiveness
- Safety/side effects
- Effect on HIV transmission or progression
- Effect on STI transmission or acquisition
- Ease of use
- Non-contraceptive benefits
- Potential interactions with other medications
Condoms and HIV

- Male or female condoms combine protection from...
  - STDs!
  - Pregnancy!
  - HIV re-infection!

Key Take-Away Points

- Women with HIV infection require routine antenatal care provided in accordance with national protocols.
- HIV can be transmitted from an infected mother to her child during pregnancy, labor and delivery, or through breastfeeding.
- Antiretroviral prophylaxis regimens reduce the risk of MTCT in both breastfeeding and non-breastfeeding women.

Key Take-Away Points (cont.)

- Women should be monitored for signs or symptoms of progressive HIV/AIDS, and opportunistic infections, particularly tuberculosis (TB).
- Use of universal precautions protects health care providers from HIV and other blood-borne infections.

Key Take-Away Points (cont.)

- Replacement feeding or exclusive breastfeeding should be recommended to reduce the risk of MTCT during the postnatal period.
- Decisions about infant feeding options should be made before delivery or when the mother leaves the clinic or hospital after delivery.
References


References (cont.)


References (cont.)


## Module 15: Best Practices in Rapid Initial Assessment, Shock, Resuscitation and Emergency Management—Session Plan

### Maternal and Newborn Care: Technical Update

<table>
<thead>
<tr>
<th>SESSION TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Practices in Rapid Initial Assessment, Shock, Resuscitation and Emergency Management</td>
<td>120 min</td>
</tr>
</tbody>
</table>

### Session Objectives

By the end of this session, participants will be able to:
- Discuss best practices for the initial assessment of obstetrical patients
- Discuss best practices in the management of shock
- Describe the steps of adult resuscitation
- Discuss the management of emergencies and emergency drills
- List the contents of an emergency tray

### Methods and Activities

**Illustrated lecture/discussion: Emergency preparedness and resuscitation (30 min)**
- Use questions and discussion throughout presentation.
- Present and discuss:
  - Definition of rapid initial assessment
  - Components of assessment
  - ABC of resuscitation
  - Definition of shock
  - When to anticipate shock
  - Signs and symptoms of shock
  - Immediate management of shock
  - Further management of shock
  - The composition of an emergency team
  - The components of an emergency tray/trolley
  - Implementation of a rapid assessment team

**Demonstration: Emergency drill (60 min)**
- Follow guidelines of emergency drill handout.

**Discussion: Using an emergency drill (30 min)**
- What are important elements of preparation for an emergency?
- What did you notice was most difficult for those implementing the emergency drill?
- How might they improve?
- Are there ways you can improve emergency preparedness at your work site?
- What elements made this an effective teaching tool?
- How could this drill have been improved?
- When and how can you use such a drill in your teaching?

### Materials/Resources

- Boxlight projector
- PowerPoint presentation
- Overhead projector with transparencies (Handouts of presentations if no electricity)
- Emergency drill handout
- All equipment and supplies (simulated) for emergency drill: emergency tray, BP apparatus, stethoscope, equipment for starting IV infusion, syringes and vials, oxygen cylinder, mask and tubing, bladder catheterization equipment, exam or high-level disinfected gloves
HANDOUT: EMERGENCY DRILLS

Emergency drills provide participants with opportunities to observe and take part in an emergency rapid response system. Unscheduled emergency drills should be a part of each service provision unit that potentially encounters emergencies. Frequent drills help ensure that each member of the emergency team knows her/his role and is able to respond rapidly. By the end of the training, participants should be able to conduct drills in their own facilities.

Drills can be conducted several times throughout training, and involve facilitators/teachers and participants. The steps involved in setting up and conducting a drill are described below.

FIRST DRILL

Facilitators/teachers decide on a scenario, such as one in which a woman suffers an immediate postpartum hemorrhage. In the first drill, facilitators play all roles as in a demonstration. A participant may play the role of patient. Facilitators should practice their roles before conducting the drill.

The roles are as follows:

**Role 1: Charge Person**
- Receives patient
- Does quick assessment / rapid appraisal and decides on management steps
- Stabilizes patient (Massages uterus, gives oxytocin, initiates immediate resuscitation, gives directions to others)
- Stays with patient until specialized care arrives or referral
- Documents findings and action taken

**Role 2: Runner**
- Sounds alarm, telephones or runs to inform doctor
- Brings emergency tray or trolley to site
- Assists as needed (e.g., gathers equipment, starts, administers emergency drugs, ventilation, cardiac massage etc.)
- Monitors vital signs
- Records vital signs and treatment given

**Role 3: Supplier**
- Checks emergency tray/trolley at the beginning of each shift
- Brings protective wear to site when alarm is raised
- Brings trolley/drip stand as needed
- Takes samples/specimens to lab
- Calls lab technician if bedside lab work is needed

**Role 4: Assistant**
- Cares for newborn if well
- Assists with crowd control
- Reassures relatives/friends; escorts family members away from bed; keeps patient and family informed of situation
- Assists in clean-up of patient

At a pre-designated time, a small bell is rung. The participant selected to play the role of patient lies down on a table or bed; she has a newborn anatomic model. Another participant may act as the patient’s family member. The charge person (Role 1) goes directly to the bedside and begins the rapid initial assessment. The runner (Role 2) telephones or runs to inform the doctor and returns to the bedside; the charge person should tell the runner to take vital signs. The supplier (Role 3) brings the emergency tray and assists with giving oxytocin, starting an IV, etc. The assistant (Role 4) takes the newborn and tells the family what is happening. All of this occurs simultaneously, as though it were a real situation. The charge person “massages” the woman’s uterus and reports whether it is contracted; the runner takes the pulse, blood pressure and respiration and reports to the charge person; the assistant “gives” oxytocin if directed, etc. Upon arrival of the doctor, the charge person gives her/him a report of the patient’s status and follows further directions until the patient is stable. After the emergency, the supplies are replenished, and equipment is disposed of using correct infection prevention practices.

**SUBSEQUENT DRILLS**

At each subsequent drill, participants take the four designated roles. At the beginning of the day, participants are assigned a role, and when the bell rings signaling an emergency, these roles are assumed and played. Different scenarios can be used for each drill.

The focus of emergency drills is on rapidity of response and coordinated functioning of roles. Drills should occur at unannounced and unexpected times during clinical training as well as during routine clinical work, even when training is not occurring, in order to maintain a unit’s capacity to respond to emergencies **rapidly and effectively**.
KNOWLEDGE ASSESSMENT: RAPID INITIAL ASSESSMENT, SHOCK, RESUSCITATION AND EMERGENCY MANAGEMENT

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. In a rapid initial assessment of airway and breathing, you should look for all of the following except:
   a. Respiratory distress
   b. Low blood pressure
   c. Cyanosis
   d. Skin pallor

2. What immediate steps would you take if you find a pregnant woman in shock:
   a. Monitor vital signs
   b. Shout for help
   c. Elevate her legs
   d. All of the above

3. An emergency tray should include all of the following except:
   a. Ambu bag and airway
   b. Sphygmomanometer
   c. Scissors
   d. Tourniquet
   e. Gloves
   f. Hair and shoe covers

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

4. In order to be prepared for an emergency, you should form an emergency team as soon as possible when the emergency arises.

5. An emergency pack for eclampsia should include all of the following: IV fluid, cannula and administration set, specimen container, gloves, catheter, MgSO4 and antihypertensive.
Session Objectives

- To discuss best practices for the initial assessment of obstetrical patients
- To discuss best practices in the management of shock
- To discuss adult resuscitation
- To describe an emergency tray/trolley
- To discuss the management of emergencies and emergency drills

Definition

A quick check of a woman’s condition when she presents with a problem to rapidly determine her degree of illness

Question ??

What would you include in a rapid initial assessment?
Assess Condition

- Airway and breathing
- Circulation (signs of shock)
- Vaginal bleeding (early or late pregnancy or after childbirth)
- Unconscious or convulsing
- Dangerous fever
- Abdominal pain

ABC of Adult Resuscitation: What To Do!

Airway: check airway: if not breathing:
Clear airway, position head back to prevent tongue falling back, place in airway

Breathing: no breath chest movements
Help client breath by ventilating (mouth to mouth, mouth to mask, Ambu bag) with/or without oxygen

Circulation no pulse or heartbeat:
Begin cardiac massage and check response (5:1 heart compressions : respiration effort)

Assess Airway and Breathing

- Danger signs:
  - Look for:
    - Cyanosis
    - Respiratory distress
  - Examine:
    - Skin: Pallor
    - Lungs: Wheezing or rales
- Consider:
  - Severe anemia
  - Heart failure
  - Pneumonia
  - Asthma

Assess Circulation

- Examine:
  - Skin: Cool and moist
  - Pulse: Fast (110 beats/min. or more) and weak
  - Blood pressure: Low (systolic less than 90 mm Hg)
- Consider shock even if blood pressure is normal
Definition of Shock

- Failure of circulatory system to maintain adequate perfusion of vital organs
- LIFE-THREATENING
- Requires immediate and intensive treatment

When to Expect or Anticipate Shock

- Bleeding:
  - Early pregnancy (e.g., abortion, ectopic pregnancy, molar pregnancy)
  - Late pregnancy or labor (e.g., placenta previa, abruptio placentae, ruptured uterus)
  - After childbirth (e.g., ruptured uterus, uterine atony)
- Infection (e.g., unsafe or septic abortion, amnionitis, metritis)
- Trauma (e.g., injury to uterus or bowel during abortion, ruptured uterus)

Question ??

When would you anticipate shock?

What are the signs and symptoms of shock?
Symptoms and Signs of Shock

- Fast, weak pulse (110 beats/min. or more)
- Low blood pressure (systolic less than 90 mm Hg)
- Pallor (inner eyelids, palms, around mouth)
- Sweatiness or cold clammy skin
- Rapid breathing (30 breaths/min. or more)
- Anxiousness, confusion, unconsciousness
- Low urine output (less than 30 mL/hour)

Question ??

What are the very first things you would do if you come upon a patient in shock?

Immediate Management of Shock

- Shout for help—mobilize personnel
- Monitor vital signs
- Position woman onto her side
- Keep woman warm
- Elevate her legs
- Collect blood for testing

Specific Management

- Start IV infusion (two if possible):
  - Infuse fluids at a rate of 1 L in 15–20 min., then give at least 2 L of fluids in first hour
  - If shock results from bleeding, more rapid infusion is necessary
- Monitor vital signs
- Catheterize bladder
- Give oxygen at 6–8 L/min.
- Blood work: Hemoglobin, cross-match
- Manage specific cause
Shock: Further Management

- Continue IV infusion at 1 L in 6 hours and oxygen at 6–8 L/min.
- Monitor closely
- Perform lab tests for hematocrit, blood grouping, Rh typing and cross-match
- If facilities available, check serum electrolytes, serum creatinine and blood pH

Question ??

What could you do to help your staff be ready for an emergency?

The Emergency Team

- Remember: Everybody can resuscitate when necessary
- Have a recognized team who are trained and ready for emergencies
- The roles: Charge Person, Runner, Supplier, Assistant

Responsibilities – Person One: Charge Person

- Receives patient
- Does quick assessment/rapid appraisal and decides on management steps
- Stabilizes patient (massages uterus, gives oxytocin, initiates immediate resuscitation, gives directions to others)
- Stays with patient until specialized care arrives or referral
- Documents findings and action taken
### Person Two: Runner
- Sounds alarm, telephones or runs to inform doctor when alarm is raised
- Brings emergency tray or trolley to site
- **Assists as needed** (e.g., gathers equipment, starts, administers emergency drugs, ventilation, cardiac massage, etc.)
- Monitors vital signs
- Records vital signs and treatment given

### Person Three: Supplier
- Checks emergency tray at beginning of each shift
- Brings emergency tray to site of emergency
- Brings protective wear to site when alarm is raised
- Brings trolley/drip stands, etc., as needed
- Takes sample to labs
- Calls lab technician if bedside lab work necessary

### Person Four: Assistant
- Cares for newborn if well
- **Reassures relatives/friends** – escorts family members away from bed; keeps family informed of situation
- Assists with crowd control as needed
- Assist in clean up of patient

### Question ??
What should be included on an emergency tray?
### Emergency Tray/Trolley

**Items List:**
- Ambu bag + face mask
- Airway
- Sphygmomanometer
- Stethoscope
- Cotton swabs
- Gauze dressings
- Plaster
- Scissors
- Torniquet
- Gloves
- Syringes and needles
- Emergency packs:
  - e.g., PPH, eclampsia
- IV fluids
- Drugs
- Oxygen source + tube
- Foley catheter

### O/G Emergency Packs

- Surgical/for shock
- IV Fluid 1 l (N/S or r/l)
- IV Cannula (X2)
- Blood-giving set
- Specimen cont (G/xm)
- Foley catheter
- Pair of gloves
- Drugs:
  - Oxytocin 20 u (x2)
  - Ergot 0.2mg (X 2)
- Medical/e.g., eclampsia
- Iv fluid 1 l (D/S or r/l)
- Iv cannula (X2)
- Administration set
- Specimen container
- Pair of gloves
- Foley catheter
- Drugs:
  - Mag so4
  - NIFÉDIPINE 20mg
  - HYDRALAZINE 20mg
  - Calcium gluconate

### Implementing a Rapid Assessment Scheme

- Train ALL staff to react in agreed-upon fashion when woman arrives at facility with obstetric emergency or pregnancy complication
- Practice clinical drills or emergency drills with staff to ensure readiness at all levels
- Ensure that access is not blocked, equipment is in working order and staff are properly trained to use equipment

### Implementing a Rapid Assessment Scheme (cont.)

- Develop norms and protocols to distinguish a real emergency and how to react immediately
- Clearly identify women in waiting room who need prompt or immediate attention
- Agree on schemes by which women with emergencies can be exempted from payment, at least temporarily
Team Work

- Roles and responsibilities are defined on each shift
- PROMPT RESPONSE to emergency call
- Regular training
- Emergency tray must always be in readiness

Emergency Drill: Demonstration

- Scenario (role play) selected, such as the one on emergency drill handout
- Roles of patient and family can be played by participants
- Roles described on previous slides are played by trainers or by pre-assigned participants who have practiced roles
- At a pre-designated time, a bell is rung, and role play begins
- Following role play, the group (observers, role players and four emergency drill participants) discusses:
  - What elements made this an effective teaching tool?
  - How could this drill have been improved?
  - When and how can you use such a drill in your teaching?

THANK YOU

References


OPTIONAL SLIDES

**Manage Specific Cause**
- Of vaginal bleeding
- Of unconsciousness or convulsions
- Of dangerous fever
- Of severe abdominal pain

**Manage Specific Cause: Heavy Bleeding**
- Stop bleeding (use oxytocics, uterine massage, bimanual compression, aortic compression, surgery)
- Give IV fluids
- Transfuse as soon as possible
- Manage cause of bleeding:
  - First 22 weeks of pregnancy: Abortion, ectopic or molar pregnancy
  - After 22 weeks or during labor but before childbirth: Placenta previa, abruptio placentae or ruptured uterus
  - After childbirth: Ruptured uterus, uterine atony, genital tract tears, retained placenta or placental fragments
- Reassess condition

**Manage Specific Cause: Infection**
- If facilities available, collect samples of blood, urine, pus for culture
- Give antibiotics to cover aerobic and anaerobic infections until fever-free for 48 hours (DO NOT GIVE BY MOUTH):
  - Penicillin G 2 million units OR ampicillin 2 g IV every 6 hours
  - PLUS gentamicin 5 mg/kg body weight IV every 24 hours
  - PLUS metronidazole 500 mg IV every 8 hours
- Reassess condition
Manage Specific Cause: Trauma

Prepare for surgical intervention

Transfusion

Risks of transfusion of whole blood or plasma:
- Transfusion reaction (skin rash to anaphylactic shock)
- Transmission of infectious agents (HIV, hepatitis B and C, syphilis, Chagas disease)
- Bacterial infection if blood is improperly manufactured or stored
- Risks increase with increase in volume transfused

Transfusion Risks

To minimize risk of transfusion:
- Effective donor selection
- Screening for infectious agents
- Quality assurance programs
- High-quality blood grouping, compatibility testing, component separation, storage and transport
- Appropriate use of blood and blood products

Principles of Clinical Transfusion

- Transfusion is only one element of managing woman
- Follow national guidelines for decision to transfuse, weighing:
  - Risks and benefits for individual patient
  - Expected degree of improvement
  - Indications for transfusion
  - Alternative fluids for resuscitation
  - Ability to monitor patient
Monitoring the Transfused Woman

- Monitor the woman before transfusion, at onset, 15 min. after start, every hour and at 4-hour intervals after completing the transfusion.
- Monitor:
  - General appearance
  - Temperature
  - Pulse
  - Blood pressure
  - Respiration
  - Fluid balance
- Note volume infused, unique donation numbers, adverse effects

Management of Transfusion Reaction

- Stop infusion
- Continue IV fluids
- Minor adverse effects:
  - Give promethazine 10 mg by mouth
# MODULE 16: BEST PRACTICES IN THE MANAGEMENT OF BLEEDING IN EARLY PREGNANCY AND POSTABORTION CARE—SESSION PLAN

**MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE**

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Practices in the Management of Bleeding in Early Pregnancy and Postabortion Care</td>
<td>50 min (140 min with MVA skills)</td>
<td></td>
</tr>
</tbody>
</table>

## SESSION OBJECTIVES

By the end of this session, participants will be able to:

- Describe best practices for diagnosis of vaginal bleeding in early pregnancy
- Describe best practices for management of vaginal bleeding during early pregnancy
- List postabortion family planning options

**NOTE**: Although MVA skills are included in the clinical component of this session, a separate module also exists on Manual Vacuum Aspiration and Counseling for Postabortion Care.

<table>
<thead>
<tr>
<th>Methods and Activities</th>
<th>Materials/Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group work: Case study (15 min)</td>
<td>Boxlight projector</td>
</tr>
<tr>
<td><em>Participants divide into groups of two to discuss case study.</em></td>
<td>PowerPoint presentation</td>
</tr>
<tr>
<td><em>Use case study example as you proceed through PowerPoint presentation.</em></td>
<td><em>Overhead projector with transparencies (Handouts of presentations if no electricity)</em></td>
</tr>
<tr>
<td>Illustrated presentation/discussion: Bleeding in early pregnancy (20 min)</td>
<td><em>Flip charts</em></td>
</tr>
<tr>
<td><em>Use questions and discussion throughout presentation.</em></td>
<td><em>Markers</em></td>
</tr>
<tr>
<td><em>Discuss issues that arise during presentation and questioning.</em></td>
<td>For demonstration/practice:</td>
</tr>
<tr>
<td><em>Be sure to cover the following topical areas:</em></td>
<td><em>Learning Guide/Checklist</em></td>
</tr>
<tr>
<td>o Causes of bleeding in early pregnancy</td>
<td><em>Anatomic model</em></td>
</tr>
<tr>
<td>o Rapid initial assessment</td>
<td><em>MVA syringe/adapters</em></td>
</tr>
<tr>
<td>o Management of threatening abortion</td>
<td><em>Light</em></td>
</tr>
<tr>
<td>o Management of inevitable abortion</td>
<td><em>Sterile or HLD gloves</em></td>
</tr>
<tr>
<td>o Management of incomplete abortion</td>
<td><em>Speculum</em></td>
</tr>
<tr>
<td>o Management of complete abortion</td>
<td><em>Tenaculum</em></td>
</tr>
<tr>
<td>o Family planning and follow-up after abortion</td>
<td><em>Syringes/needles</em></td>
</tr>
<tr>
<td>o Signs and symptoms of ectopic pregnancy</td>
<td><em>Buckets/containers for infection prevention procedures</em></td>
</tr>
<tr>
<td>o Management of ectopic pregnant</td>
<td></td>
</tr>
<tr>
<td>o Signs and symptoms of molar pregnancy</td>
<td></td>
</tr>
<tr>
<td>o Management of molar pregnancy</td>
<td></td>
</tr>
<tr>
<td>Role play: Communication for women with complication (15 min)</td>
<td></td>
</tr>
<tr>
<td><em>Volunteers act out role play for group.</em></td>
<td></td>
</tr>
<tr>
<td><em>Discuss role play and interpersonal communication skills.</em></td>
<td></td>
</tr>
</tbody>
</table>

Demonstration and Skills Practice: PAC counseling and MVA (90 min)
ROLE PLAY: COMMUNICATING ABOUT COMPLICATIONS DURING PREGNANCY

DIRECTIONS

The teacher will select three learners to perform the following roles: skilled provider, antenatal patient and patient’s husband. The three learners participating in the role play should take a few minutes to prepare for the activity by reading the background information provided below. The remaining learners, who will observe the role play, should at the same time read the background information.

The purpose of the role play is to provide an opportunity for learners to appreciate the importance of good interpersonal communication skills when providing care for a woman who experiences an obstetric complication.

PARTICIPANT ROLES

Provider: The provider is an experienced doctor who has good interpersonal communication skills.

Patient: Mrs. A., who is 12 weeks pregnant, is a 25-year-old housewife, gravida 2. She has a healthy 3-year-old daughter.

Patient’s husband: Mr. A. is also 25 years old and works as a driver in a government office.

SITUATION

Mrs. A.’s husband has brought her to the emergency department of the district hospital because she has vaginal bleeding. She has been assessed by the doctor, who has started an IV infusion to replace blood loss. Mrs. A.’s diagnosis is incomplete abortion. She has no symptoms or signs of shock; however, both she and her husband are very upset and anxious about her condition. Mrs. A.’s pregnancy was planned, and she and her husband were looking forward to completing their family with the birth of a second child. The doctor must tell Mrs. A. that it will be necessary to evacuate the remaining products of conception from her uterus, explaining the nature of the procedure and the risks involved.

FOCUS OF THE ROLE PLAY

The focus of the role play is the interpersonal interaction between the doctor and the patient and the appropriateness of the doctor’s verbal and nonverbal communication skills.

DISCUSSION QUESTIONS

The teacher should use the following questions to facilitate discussion after the role play:

1. How did the doctor explain the procedure and the associated risks to Mrs. A. and her husband?
2. What nonverbal behaviors did the doctor use to encourage interaction among her/himself, Mrs. A. and her husband?

3. How did the doctor ensure that Mrs. A. and her husband understood what s/he had told them?
CASE STUDY: VAGINAL BLEEDING DURING EARLY PREGNANCY

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical-decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

CASE STUDY

Mrs. A. is 28 years old. She is 12 weeks pregnant when she presents at the health center complaining of light vaginal bleeding. This is Mrs. A.’s first pregnancy. It is a planned pregnancy, and she has been well until now.

ASSESSMENT
(History, physical examination, screening procedures/laboratory tests)

1. What will you include in your initial assessment of Mrs. A., and why?

2. What particular aspects of Mrs. A.’s physical examination will help you make a diagnosis or identify her problems/needs, and why?

3. What causes of bleeding do you need to rule out?

DIAGNOSIS
(Identification of problems/needs)

You have completed your assessment of Mrs. A., and your main findings include the following:

- Mrs. A.’s temperature is 36.8º C, her pulse rate is 82 beats/minute and her blood pressure is 110/70 mm Hg.
- She has no skin pallor or sweating.
- She has slight lower abdominal cramping/pain and light vaginal bleeding.
- Her uterine size is equal to dates, she has no uterine tenderness and no cervical motion tenderness, and the cervix is closed.

4. Based on these findings, what is Mrs. A.’s diagnosis, and why?

CARE PROVISION
(Planning and intervention)

5. Based on your diagnosis, what is your plan of care for Mrs. A., and why?
EVALUATION

- Mrs. A. returns to the health center in 3 days.
- She reports that the bleeding became heavier last night, and that since then she has been having cramping and lower abdominal pain.
- She has not passed any products of conception, her uterus corresponds to dates and her cervix is now dilated. She has no signs or symptoms of shock.
- Mrs. A. is very upset about the possibility of miscarrying.

6. Based on these findings, what is your continuing plan of care for Mrs. A., and why?
<table>
<thead>
<tr>
<th>PURPOSE</th>
<th>INSTRUCTIONS</th>
<th>RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The purpose of this activity is to enable learners to practice manual</td>
<td>This activity should be conducted in a simulated setting, using the appropriate models.</td>
<td>The following equipment or representations thereof:</td>
</tr>
<tr>
<td>vacuum aspiration, achieve competency in the skills required and</td>
<td>Learners should review Learning Guide Postabortion Family Planning Counseling and Postpartum Care (MVA) before</td>
<td>● Pelvic model</td>
</tr>
<tr>
<td>develop skills in postabortion family planning counseling.</td>
<td>beginning the activity.</td>
<td>● High-level disinfected or sterile surgical gloves</td>
</tr>
<tr>
<td></td>
<td>The facilitator/teacher should demonstrate the preliminary steps (medical evaluation, explaining the procedure,</td>
<td>● Personal protective barriers</td>
</tr>
<tr>
<td></td>
<td>pelvic examination), followed by the steps in the MVA procedure. Under the guidance of the facilitator/teacher,</td>
<td>● MVA syringes and cannula</td>
</tr>
<tr>
<td></td>
<td>learners should then work in pairs to practice the steps/tasks and observe each other’s performance, using Learning</td>
<td>● Vaginal speculum</td>
</tr>
<tr>
<td></td>
<td>Guide Postabortion Care (MVA).</td>
<td>● Single-toothed tenaculum or vulsellum forceps</td>
</tr>
<tr>
<td></td>
<td>The facilitator/teacher should then demonstrate the steps/tasks in providing postabortion family planning</td>
<td>Learning Guide: Postabortion Care (MVA)</td>
</tr>
<tr>
<td></td>
<td>counseling.</td>
<td>Learning Guide: Postabortion Family Planning Counseling</td>
</tr>
<tr>
<td></td>
<td>Under the guidance teacher, learners should then work of the facilitator/teacher in groups of three to practice the</td>
<td>Learning Guide: Postabortion Care (MVA)</td>
</tr>
<tr>
<td></td>
<td>steps/tasks and observe each other’s performance; one learner should take the role of the postabortion woman,</td>
<td>Learning Guide: Postabortion Family Planning Counseling</td>
</tr>
<tr>
<td></td>
<td>the second should practice counseling skills, and the third should observe performance using Learning Guide</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Postabortion Care Family Planning Counseling. Learners should then reverse roles until each has had an opportunity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>to practice counseling skills.</td>
<td></td>
</tr>
<tr>
<td>PURPOSE</td>
<td>INSTRUCTIONS</td>
<td>RESOURCES</td>
</tr>
<tr>
<td>---------</td>
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</tr>
<tr>
<td>Learners should be able to perform the steps/tasks in the relevant Learning Guide before skill competency is assessed by the teacher in the simulated setting, using the relevant checklists. Finally, following supervised practice at a clinical site, the facilitator/teacher should assess the skill competency of each learner, using the relevant checklists.¹</td>
<td>Checklist: Postabortion Care (MVA) Checklist: Postabortion Family Planning Counseling</td>
<td>Checkli: List: Postabortion Care (MVA) Checklist: Postabortion Family Planning Counseling</td>
</tr>
</tbody>
</table>

¹ If patients are not available at clinical sites for learners to practice postabortion care in relation to obstetric emergencies, the skills should be taught, practiced and assessed in a simulated setting.
CLINICAL SIMULATION: MANAGEMENT OF VAGINAL BLEEDING DURING EARLY PREGNANCY

Purpose: The purpose of this activity is to provide a simulated experience for learners to practice problem-solving and decision-making skills in the management of vaginal bleeding in early pregnancy, with emphasis on thinking quickly and reacting (intervening) rapidly.

Instructions: The activity should be carried out in the most realistic setting possible, such as the labor and delivery area of a hospital, clinic or maternity center, where equipment and supplies are available for emergency interventions.

- One learner should play the role of patient and a second learner the role of skilled provider. Other learners may be called on to assist the provider.
- The facilitator/teacher will give the learner playing the role of provider information about the patient’s condition and ask pertinent questions, as indicated in the left-hand column of the chart below.
- The learner will be expected to think quickly and react (intervene) rapidly when the facilitator/teacher provides information and asks questions. Key reactions/responses expected from the learner are provided in the right-hand column of the chart below.
- Procedures such as starting an IV and bimanual examination should be role-played, using the appropriate equipment.
- Initially, the facilitator/teacher and learner will discuss what is happening during the simulation in order to develop problem-solving and decision-making skills. The italicized questions in the simulation are for this purpose. Further discussion may take place after the simulation is completed.
- As the learner’s skills become stronger, the focus of the simulation should shift to providing appropriate care for the life-threatening emergency situation in a quick, efficient and effective manner. All discussion and questioning should take place after the simulation is over.

Resources: Learning Guides for Postabortion Care and Postabortion Care Family Planning Counseling, childbirth simulator, sphygmomanometer, stethoscope, equipment for starting an IV infusion, syringes and vials, bucket for waste disposal, high-level disinfected or sterile surgical gloves, antiseptic solution.
| SCENARIO 1  
(Information provided and questions asked by the facilitator/teacher) | KEY REACTIONS/RESPONSES  
(Expected from learner) |
|---|---|
| 1. Mrs. A. is 20 years old. This is her first pregnancy. Her family brings her into the health center. Mrs. A. is able to walk with the support of her sister and husband. She reports that she is 14 or 15 weeks pregnant and that she has had some cramping and spotting for several days. However, she has had heavy bleeding and cramping for the past 6–8 hours. She has not attended an antenatal clinic nor is she being treated for any illnesses.  
- What is your first concern?  
- What will you do first? |  
- States that first concern is to determine whether or not Mrs. A. is in shock  
- Makes a rapid evaluation of her general condition, including vital signs (temperature, pulse, blood pressure and respiration rate), level of consciousness, color and skin temperature  
- Explains to Mrs. A. (and her family) what is going to be done, listens to them and responds attentively to their questions and concerns |
| 2. On examination, you find that Mrs. A.’s blood pressure is 100/60 mm Hg, pulse 100 beats/minute, respiration rate 24 breaths/minute. She is conscious. Her skin is not cold or clammy. You notice bright red blood soaking through her dress.  
- Is Mrs. A. in shock?  
- What will you do next?  
- What questions will you ask? |  
- States that Mrs. A. is not in shock  
- Starts an IV infusion of normal saline or Ringer’s lactate  
- Asks Mrs. A. if anything happened to her or if anyone did anything to her which may have caused the bleeding  
- Asks how long it takes to soak a pad  
- Asks if Mrs. A. has passed any tissue  
- Asks if she has fainted |
| 3. Mrs. A. was well until she started bleeding. You can tell from her responses that she wanted this pregnancy. You see no signs of physical violence. She soaks a pad every 4–5 minutes. She has not fainted but she “feels dizzy.” She has passed some clots and thinks she may have passed tissue.  
- What will you do next and why? |  
- Palpates Mrs. A.’s abdomen for uterine size, tenderness and consistency; checks for tender adnexal mass to rule out ectopic pregnancy; checks for large, boggy uterus to rule out molar pregnancy  
- Does a bimanual examination to rule out inevitable or incomplete abortion  
- Takes Mrs. A.’s temperature to rule out sepsis |
| 4. On examination, you find that the uterus is firm, slightly tender and palpable just at the level of the symphysis pubis; there are no adnexal masses. Bimanual examination reveals that the cervix is approx 1–2 cm dilated, uterine size is less than 12 weeks, and no tissue is palpable at the cervix. There is no cervical motion tenderness.  
- What is your working diagnosis? |  
- States that Mrs. A. has an incomplete abortion |

**Discussion Question 1:** Why did you rule out ectopic pregnancy?  
**Expected Responses:** Bleeding is heavier than for ectopic; no adnexal masses were palpable abdominally or vaginally; no cervical motion tenderness; cervix is dilated; no history of fainting
<table>
<thead>
<tr>
<th>SCENARIO 1 (continuation)</th>
<th>KEY REACTIONS/RESPONSES (continuation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. (continued)</td>
<td></td>
</tr>
</tbody>
</table>
| • What will you do now?   | • Explains findings to Mrs. A. (and her family)  
|                           | • Prepares Mrs. A. for MVA              |
|                           |                                       |
| 5. The treatment room is occupied at the moment because another patient with incomplete abortion is undergoing an MVA. The room will be available in 30 minutes.  
• What will you do now?  
|                           | • Explains the situation to Mrs. A. (and her family)  
|                           | • Keeps the IV running                  |
|                           | • Gives ergometrine 0.2 mg IM OR misoprostol 400 μg orally  
|                           | • Continues to monitor blood loss, pulse and blood pressure |
|                           |                                       |
| 6. Fifteen minutes have passed since ergometrine was given, but Mrs. A. is still soaking one pad every 5 minutes. Her blood pressure is 98/60 mm Hg and her pulse 104 beats/minute.  
• What will you do now?  
|                           | • Repeats the ergometrine 0.2 mg IM                  |
|                           | • Continues IV infusion                      |
|                           | • Continues to monitor blood loss, blood pressure and pulse  
|                           | • Takes blood for typing and cross-matching so that it is available if needed  |
|                           |                                       |
| 7. Bleeding slowed after the second dose of ergometrine. MVA was performed 30 minutes later and complete evacuation of the products of conception has been assured.  
• What will you do now?  
|                           | • Monitors Mrs. A.’s vital signs and blood loss  
|                           | • Ensures that Mrs. A. is clean, warm and comfortable  
|                           | • Encourages her to eat and drink as she wishes  |
|                           |                                       |
| 8. After 6 hours, Mrs. A.’s vital signs are stable and there is almost no blood loss. She insists on going home.  
• What will you do before she goes home?  
|                           | • Talks to Mrs. A. about whether or not she wants to get pregnant and when; provides family planning counseling and a family planning method, if necessary  
|                           | • Provides reassurance about the chances for a subsequent successful pregnancy  
|                           | • Advises Mrs. A. to seek medical attention immediately if she develops prolonged cramping, prolonged bleeding, bleeding more than normal menstrual bleeding, severe or increased pain, fever, chills or malaise, foul-smelling discharge, fainting  
|                           | • Talks to her and her husband about safe sex  
|                           | • Asks about her tetanus immunization status and provides immunization if needed  |
|                           |                                       |
KNOWLEDGE ASSESSMENT:
MANAGEMENT OF BLEEDING IN EARLY PREGNANCY

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Vaginal bleeding during the first 22 weeks of pregnancy could be caused by:
   a. An incomplete abortion/miscarriage
   b. An ectopic pregnancy
   c. A molar pregnancy
   d. a) and b)
   e. All of the above

2. In the case of an incomplete abortion less than 16 weeks, when immediate evacuation of the uterus is not possible, you should:
   a. Give ergometrine 0.2 mg. IM or misoprostol 400 mcg by mouth and arrange for evacuation
   b. Perform an ultrasound
   c. Observe for at least 1 hour before giving medication
   d. All of the above

3. Family planning methods that can be provided immediately postabortion include:
   a. Copper T-380a IUD
   b. Progestin only methods (pills, Norplant, Depo-Provera)
   c. Combined oral contraceptives or voluntary tubal ligation
   d. a) and b)
   e. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

4. Signs and symptoms of ruptured ectopic pregnancy include shock, acute abdominal pain, abdominal distension and pallor. ______

5. If the diagnosis of molar pregnancy is certain, the uterus should be evacuated. ______

6. Manual vacuum aspiration is usually safer, less traumatic and less painful than dilatation and curettage (D&C). ______

7. Differential diagnosis of bleeding in early pregnancy can often be made clinically, saving time and expense. ______
Session Objectives

- To describe best practices for diagnosis of vaginal bleeding in early pregnancy
- To describe best practices for management of vaginal bleeding during early pregnancy
- To list postabortion family planning options

Case Study

Have everyone read Case Study 1 and discuss in group

Definition: What is bleeding in early pregnancy?

Vaginal bleeding that occurs during the first 22 weeks of pregnancy
Rapid Initial Assessment

- Rapid evaluation of woman’s general condition including vital signs (pulse, blood pressure, respiration, temperature)
- If shock suspected, immediately begin treatment
- If woman is in shock, consider ruptured ectopic pregnancy
- Start an IV infusion and infuse IV fluids

What May Cause Bleeding . . .

. . . in early pregnancy?

Bleeding in Early Pregnancy: Diagnosis of Abortion

- Threatened abortion
- Complete abortion
- Inevitable abortion
- Incomplete abortion
- Ectopic pregnancy
- Molar pregnancy

Management of Threatened Abortion

- Medical treatment usually not necessary.
- Advise woman to avoid strenuous activity and sexual intercourse; bed rest not necessary.
- If bleeding stops, followup in antenatal clinic. Reassess if bleeding recurs.
- If bleeding persists, assess for fetal viability (pregnancy test/ultrasound) or ectopic pregnancy (ultrasound). Persistent bleeding, esp. in the presence of uterus larger than expected, may indicate twins or molar pregnancy.

Do not give medications such as hormones (e.g., estrogens or progestins) or tocolytic agents (e.g., salbutamol or indomethacin) as they will not prevent miscarriage.
Management of Inevitable Abortion

- If pregnancy is <16 weeks, plan for evacuation of uterine contents. If evacuation not immediately possible:
  - Give ergometrine 0.2 mg IM (repeated after 15 min. if necessary) OR misoprostol 400 mcg by mouth (repeated once after 4 hours if necessary);
  - Arrange for evacuation as soon as possible.
- Ensure follow-up after treatment.

Management of Inevitable Abortion (cont.)

- If pregnancy is ≥ 16 weeks:
  - Await spontaneous expulsion of products of conception and then evacuate uterus to remove any remaining products of conception
  - If necessary, infuse oxytocin 40 units in 1 L IV fluids at 40 drops/min to help expulsion of products of conception

Management of Incomplete Abortion: < 16 Weeks

- If bleeding light to moderate, use fingers or ring (or sponge) forceps to remove products of conception protruding through cervix.
- If bleeding heavy, evacuate uterus:
  - Manual vacuum aspiration (MVA) is preferred method. Sharp curettage should be done only if MVA not available
  - If evacuation not immediately possible, give ergometrine 0.2 mg IM (repeated after 15 min. if necessary) OR misoprostol 400 mcg orally (repeated once after 4 hours if necessary)
- Ensure follow-up of the woman after treatment.

Management of Incomplete Abortion: ≥ 16 Weeks

- Infuse oxytocin 40 units in 1 L IV fluids at 40 drops/min. until expulsion of POC occurs
- Evacuate any remaining products of conception from uterus by dilatation and curettage
- If necessary, give misoprostol 200 mcg vaginally every 4 hours until expulsion, but do not administer more than 800 mcg
- Ensure follow-up of the woman after treatment
### Management of Complete Abortion
- Evacuation of the uterus usually not necessary
- Observe for heavy bleeding
- Ensure follow-up of woman after treatment

### Follow-Up after Abortion
- Tell woman that spontaneous abortion is common.
- Reassure woman that chances for subsequent successful pregnancy are good unless there has been sepsis or unless cause of abortion is identified that may have an adverse effect on future pregnancies (rare).

### Follow-Up after Spontaneous Abortion
- Encourage her to delay next pregnancy until completely recovered.
- Provide counseling for women who have had unsafe abortion. If pregnancy not desired, certain FP methods can be started immediately (within 7 days) if:
  - There are no severe complications requiring further treatment
  - Woman receives adequate counseling and help in selecting most appropriate FP method

### Question ??
What methods of family planning can be used postabortion and how long after the abortion do you need to wait to begin each method?
**Family Planning Methods after Postabortion Care**

<table>
<thead>
<tr>
<th>Type of FP Method</th>
<th>Advise to Start</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hormonal</td>
<td>Immediately</td>
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<tr>
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</tr>
<tr>
<td>IUD</td>
<td>Immediately</td>
</tr>
<tr>
<td>Or Voluntary Tubal Ligation</td>
<td>If infection present or suspected, delay insertion/surgery until cleared. If Hb &lt; 7 g/dL delay until anemia improves. Provide interim method (e.g., condom).</td>
</tr>
</tbody>
</table>

**Ectopic Pregnancy: Clinical Diagnosis**

- **Symptoms:**
  - Pain: 90–100% of patients
  - Amenorrhea/abnormal menses: 75–95%
  - Irregular bleeding: 50–80%
  - Pregnancy symptoms: 10–25%

**Ectopic Pregnancy: Clinical Diagnosis (cont.)**

- **Signs:**
  - Afebrile
  - Abdominal tenderness: 80–95%
  - Rebound tenderness: 45%
  - Palpable mass: 50% (often opposite side)
  - Normal sized uterus: 71%

- Use combination testing to increase sensitivity and specificity

**Ectopic Pregnancy**

- Pregnancy that is outside the uterine cavity
- Can be in the tube, ovary, abdomen or other locations
- Treated surgically by removal of the pregnancy or tube
- Also treated medically, although not available in developing countries
- If ruptures, can lead to hemorrhage and death
Signs and Symptoms of Unruptured Ectopic Pregnancy

- Symptoms of early pregnancy:
  - Irregular spotting or bleeding
  - Nausea
  - Swelling of breasts
  - Bluish discoloration of vagina and cervix
  - Softening of cervix
  - Slight uterine enlargement
  - Increased urinary frequency

- Abdominal and pelvic pain

Signs and Symptoms of Ruptured Ectopic Pregnancy

- Collapse and weakness
- Fast, weak pulse (≥ 110/minute)
- Hypotension
- Hypovolemia
- Acute abdominal and pelvic pain
- Abdominal distension
- Rebound tenderness
- Pallor

Differential Diagnosis for Ectopic Pregnancy

- Threatened abortion
- Acute or chronic PID
- Ovarian cysts
  - (torsion or rupture)
- Acute appendicitis
- Remember: A ruptured ectopic pregnancy could be life-threatening!

Management of Ectopic Pregnancy

- Cross-match blood
- Arrange for immediate laparotomy
- After surgery, prior to discharge, counsel on prognosis for fertility, and family planning needs
- Provide iron supplements for at least 6 months
**Signs and Symptoms of Molar Pregnancy**

- Heavy bleeding
- Dilated cervix
- Uterus larger than dates
- Uterus softer than normal
- Partial expulsion of products of conception that resemble grapes
- Sometimes: nausea/vomiting, cramping, early onset pre-eclampsia

**Molar Pregnancy**

- If diagnosis of molar pregnancy is certain, evacuate the uterus:
  - Use vacuum aspiration:
    - Risk of perforation using a metal curette is high
    - Have three syringes cocked and ready for use as uterine contents are copious and must be evacuated rapidly
  - Infuse oxytocin 20 units in 1 L IV (NS or RL) at 60 drops/minute to prevent hemorrhage once evacuation is under way
- Subsequent management:
  - Use contraception for at least 1 year
  - Follow up every 8 weeks for at least 1 year to monitor for trophoblastic disease or choriocarcinoma

**Summary**

- Vaginal bleeding in early pregnancy could be caused by:
  - Threatened abortion
  - Incomplete abortion
  - Complete abortion
  - Ectopic pregnancy
  - Molar pregnancy
- Diagnosis can often be made clinically, saving time and expense

**References**

SUPPLEMENTARY MODULE 16.1: BEST PRACTICES IN POSTABORTION CARE—SESSION PLAN

MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Practices in Postabortion Care (PAC)</td>
<td>120 min</td>
</tr>
</tbody>
</table>

SESSION OBJECTIVES

NOTE: Much content of this session is duplicative of content in the session on Best Practices in Management of Early Bleeding in Pregnancy. Clinical MVA skills are the same. It is suggested that the facilitator use one session or the other rather than both, depending on the individual learning situation.

By the end of this session, participants will be able to:

- Describe the initial assessment of a woman bleeding in early pregnancy
- Define the stages of abortion
- Describe pain management in postabortion care
- Discuss postabortion family planning
- Describe the management of problems that may occur with Manual Vacuum Aspiration
- Competently perform MVA on a model

Methods and Activities

| Illustration/demonstration: Best practices in postabortion care (20 min) |
| Use questions and discussion throughout presentation as indicated on slides. |
| Cover the following: |
| • Objectives of session |
| • The initial assessment of a woman bleeding in early pregnancy |
| • The stages of abortion |
| • Pain management in postabortion care |
| • Family planning for the postabortion care client |
| • The management of problems that may occur with Manual Vacuum Aspiration |

Skills demonstration and practice: Manual vacuum aspiration (100 min)

- Demonstration: (20 min)
- Practice: (80 min)

Divide participants into three groups to practice each skill with a model. One participant practices while others in group follow with learning guide. Participants rotate within each small group until all have practiced. They then rotate to another skill station.

Materials/Resources

- Boxlight projector
- PowerPoint presentation
- Overhead projector with transparencies (Handouts of presentations if no electricity)
- Copies of Learning Guides and Checklists for Manual Vacuum Aspiration
- ZOE model
- MVA equipment (syringe, cannula)
- Speculum
- Sponge forceps
- Tenaculum
- High-level disinfected or surgical gloves
- Personal protective barriers
- 0.5% chlorine solution and receptacle for decontamination
- Leak-proof container or plastic bag
### SKILLS PRACTICE SESSION: POSTABORTION CARE

<table>
<thead>
<tr>
<th>PURPOSE</th>
<th>INSTRUCTIONS</th>
<th>RESOURCES</th>
</tr>
</thead>
</table>
| The purpose of this activity is to enable learners to practice manual vacuum aspiration. | This activity should be conducted in a simulated setting. | • Childbirth simulator with baby and placenta  
• ZOE model  
• MVA equipment (syringe, cannula)  
• Speculum  
• Sponge forceps  
• Tenaculum  
• High-level disinfected or surgical gloves  
• Personal protective barriers  
• 0.5% chlorine solution and receptacle for decontamination  
• Leak-proof container or plastic bag |
| Learners should review Learning Guide for Manual Vacuum Aspiration before beginning the activity. | The facilitator/teacher should demonstrate the steps/tasks in each learning guide one at a time. The facilitator/teacher should show each piece of equipment and explain its use. Show anatomical landmarks. The facilitator/teacher must explain each step of procedure and any cautions associated with each step. Under the guidance of the facilitator/teacher, learners should then work in pairs and practice the steps/tasks in each individual Learning Guide and observe each other’s performance; while one learner performs the skill, the second learner should use the relevant section of each Learning Guide to observe performance. Learners should then reverse roles. | Learning Guide: : Manual Vacuum Aspiration |
| | Learners should be able to perform the steps/tasks relevant each skill before skills competency is assessed in a simulated setting. | Checklist: Manual Vacuum Aspiration |
KNOWLEDGE ASSESSMENT: POSTABORTION CARE

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. The signs of an incomplete abortion include all of the following except:
   a. A missed period or delayed menstrual bleeding
   b. Vaginal bleeding
   c. Cramping or lower abdominal pain
   d. Passage of pregnancy tissue
   e. Fever

2. Serious complications that must be screened for immediately include:
   a. Signs of shock
   b. Signs and symptoms of severe bleeding
   c. Signs and symptoms of infection
   d. Signs and symptoms of intra-abdominal injury
   e. All of the above

3. Family planning methods that can be started immediately following abortion for every woman who does not have an infection include:
   a. Oral contraceptives
   b. Progestin only injections
   c. IUD
   d. a) and b)
   e. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

4. One key to pain management during postabortion care is supportive attention from care providers, throughout care, including before, during and after the procedure.  

5. A client cannot become pregnant until the first menses after an abortion.
Best Practices in Postabortion Care

Session Objectives

- Describe the initial assessment of a woman bleeding in early pregnancy
- Define the stages of abortion
- Describe pain management in postabortion care
- Discuss postabortion family planning
- Describe the management of problems that may occur with Manual Vacuum Aspiration

RAPID Initial Assessment

- Rapid evaluation of woman’s general condition including vital signs (pulse, blood pressure, respiration, temperature)
- If shock suspected, immediately begin treatment
- If woman is in shock, consider ruptured ectopic pregnancy
- Start an IV infusion and infuse IV fluids

Question ??

What are the signs and symptoms of incomplete abortion?
### Initial Assessment

**Signs and symptoms of incomplete abortion:**
- A missed period or delayed menstrual bleeding
- Vaginal bleeding
- Cramping or lower abdominal pain
- Passage of pregnancy tissue

**Screening for serious complications:**
- Signs of shock
- Signs and symptoms of severe bleeding
- Signs and symptoms of infection/sepsis
- Signs and symptoms intra-abdominal injury

### Initial Assessment (cont.)

**History:**
- Medical history
- LMP
- Vaginal bleeding (amount and duration)
- Cramping (duration and severity)
- Fever, chills or general malaise
- Abdominal and shoulder pain
- Tetanus vaccination status

**Examination:**
- General examination
- Abdominal examination
- Pelvic examination
Question ??

What are the stages of abortion?

Stages of Abortion

- Threatened abortion
- Inevitable abortion
- Incomplete abortion
- Complete abortion

NOTE: Bleeding in pregnancy can also be caused by ectopic or molar pregnancies.

Bleeding in Early Pregnancy: Management of Threatened Abortion

- Medical treatment usually not necessary.
- Advise woman to avoid strenuous activity and sexual intercourse; bed rest not necessary.
- If bleeding stops, followup in antenatal clinic. Reassess if bleeding recurs.
- If bleeding persists, assess for fetal viability (pregnancy test/ultrasound) or ectopic pregnancy (ultrasound). Persistent bleeding, esp. in the presence of uterus larger than expected, may indicate twins or molar pregnancy.

Management of Inevitable Abortion

- If pregnancy is < 16 weeks, plan for evacuation of uterine contents. If evacuation not immediately possible:
  - Give ergometrine 0.2 mg IM (repeated after 15 min. if necessary) OR misoprostol 400 mcg by mouth (repeated once after 4 hours if necessary);
  - Arrange for evacuation as soon as possible.
- If pregnancy is ≥ 16 weeks:
  - Await spontaneous expulsion of products of conception and then evacuate uterus to remove any remaining products of conception
  - If necessary, infuse oxytocin 40 units in 1 L IV fluids at 40 drops/min to help expulsion of products of conception

Do not give medications such as hormones (e.g. estrogens or progestins) or tocolytic agents (e.g. salbutamol or indomethacin) as they will not prevent miscarriage.
Management of Incomplete Abortion: < 16 Weeks

- If bleeding light to moderate, use fingers or ring (or sponge) forceps to remove products of conception protruding through cervix.
- If bleeding heavy, evacuate uterus:
  - Manual vacuum aspiration (MVA) is preferred method.
  - If evacuation not immediately possible, give ergometrine 0.2 mg IM (repeated after 15 min. if necessary) OR misoprostol 400 mcg orally (repeated once after 4 hours if necessary).
- Ensure follow-up of the woman after treatment.

Management of Incomplete Abortion: ≥ 16 Weeks

- Infuse oxytocin 40 units in 1 L IV fluids at 40 drops/min. until expulsion of POC occurs
- Evacuate any remaining POC from uterus by dilatation and curettage
- If necessary, give misoprostol 200 mcg vaginally every 4 hours until expulsion, but do not administer more than 800 mcg
- Ensure follow-up of the woman after treatment

MVA: Pain Management

Keys to pain management:

- Supportive attention from staff before, during and after the procedure
- A provider who is comfortable working with patients who are awake and is trained to handle instruments gently
- Selection of an appropriate level of pain medication
- Use of verbacaine

MVA: Pain Management (cont.)

Tips for working with patients who are awake:

- Explain each step of the procedure prior to performing it
- Wait a few second after performing each task
- Move slowly, without jerky or quick motion; use instruments with confidence
- Talk with the patient throughout the procedure
MVA: Pain Management (cont.)

The need for supplemental medication or paracervical block depends on:
- The emotional status of the patient
- How open (dilated) the cervix is
- Anticipated length of the procedure

Problems and Complications during MVA

Technical problems:
- Syringe full
- Cannula withdrawn prematurely
- Cannula clogged
- Syringe does not hold vacuum

Procedural problems:
- Little, if any, tissue
- Incomplete evacuation

Management of Problems and Complications during MVA

Syringe full:
- Close the pinch valve of the syringe
- Disconnect the syringe from the cannula
- Empty the syringe into a container
- Re-establish a vacuum in a syringe, reconnect and resume the aspiration

Management of Problems and Complications during MVA (cont.)

Cannula withdrawn prematurely:
- Remove the syringe and cannula
- Close the pinch valve of the syringe
- Detach the syringe from the cannula, empty the syringe, then re-establish the vacuum in the syringe
- Reinsert the cannula
- Reconnect the syringe release the valve and continue aspiration
Management of Problems and Complications during MVA (cont.)

Cannula clogged:
- Close the pinch valve
- Remove the syringe and cannula
- Remove the material from the opening in the cannula using a sterile or HLD forceps
- Reinsert the cannula, attach a prepared syringe and release the pinch valve

Complications during MVA

- Uterine perforation
- Cervical perforation
- Shock, severe vaginal bleeding and post-MVA infection
- Air embolism

Postabortion Family Planning

What all PAC patients should understand:
- They can become pregnant again before the next menses
- There are safe methods to prevent or delay pregnancy
- Where and how they can obtain family planning services and methods

Factors Limiting Provision of Postabortion Family Planning Services

- Health care staff may have misconceptions about which contraceptive methods are appropriate.
- Providers of emergency postabortion care may NOT view the provision of contraceptive services as their responsibility.
- In hospitals, there may be administrative divisions (Ob/Gyn and FP services).
Factors Limiting Provision of Post-abortional Family Planning Services (cont.)

- Often, emergency PAC and FP services are not coordinated
- Women who have been treated for incomplete abortion may not realize that their fertility will return soon
- Women may not know where FP and other reproductive health services are available

Postabortion Family Planning (cont.)

Components of good postabortion FP care:

- Information and counseling about methods, their characteristics, effectiveness and side effects
- Choice of methods
- Assurance of contraceptive resupply
- Access to follow-up care

Question ??

What methods of family planning can be used postabortion and how long after the abortion do you need to wait to begin each method?

PAC Contraceptive Methods

These methods can be started immediately for every woman who meets criteria:

- Oral contraceptives
- Progestin-only contraceptives
- Patches
- Implants
- Condoms
PAC Contraceptive Methods (cont.)

These methods can be started once infection is ruled out or resolved:
- Female sterilization
- IUD
- Fertility awareness methods

Postabortion Family Planning (cont.)

Postabortion family planning should be based on an individual assessment of every woman’s situation:
- Her personal characteristics, needs and reproductive goals
- Her clinical condition

Summary of FP Methods after Postabortion Care

<table>
<thead>
<tr>
<th>Type of FP Method</th>
<th>Advise to Start</th>
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<td>Provide interim method (e.g., condom)</td>
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# Module 17: Best Practices in the Management of Bleeding in Late Pregnancy—Session Plan

## Maternal and Newborn Care: Technical Update

<table>
<thead>
<tr>
<th>Session</th>
<th>Topic</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Practices in the Management of Bleeding in Late Pregnancy</td>
<td>60 min</td>
</tr>
</tbody>
</table>

### Session Objectives

By the end of this session, participants will be able to:

- Describe best practices for the diagnosis and management of abruptio placentae
- Describe best practices for the diagnosis and management of placenta previa

### Methods and Activities

<table>
<thead>
<tr>
<th>Group work: Case study (15 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants divide into groups of two to discuss case study.</td>
</tr>
<tr>
<td>Use case study example as you proceed through PowerPoint presentation.</td>
</tr>
<tr>
<td>Be sure to cover the following topical areas:</td>
</tr>
</tbody>
</table>
  - Definition of bleeding in late pregnancy |
  - Causes of bleeding in late pregnancy |
  - Description of abruptio placentae |
  - Diagnosis of abruptio placentae |
  - Management of abruptio placentae |
  - Description of placenta previa |
  - Diagnosis of placenta previa |
  - Management of placenta previa |

### Materials/Resources

- Boxlight projector
- PowerPoint presentation
- Overhead projector with transparencies (Handouts of presentations if no electricity)

### Illustrated Presentation/discussion: Bleeding in late pregnancy (25 min)

- Use questions and discussion throughout presentation as indicated on slides.
- Discuss issues that arise during presentation and questioning.

### Case study: Bleeding in late pregnancy (20 min)

- Read case study and questions to large group.
- Discuss each response from the group in the diagnosis and management of the woman in this case study.
CASE STUDY: BLEEDING IN LATE PREGNANCY

DIRECTIONS

This case study can be used with a single group, with the facilitator/teacher reading the questions and findings, and the learners answering the questions as a group. This particular case study is better for narrating by a facilitator rather than for small group work in which the case study is read by individuals, since the answers to the questions are implied in the information given.

Alternatively, learners can be divided into smaller groups. In the groups, learners will read and analyze this case study individually. When the others in the group have finished reading it, the group discusses the answers the case study questions together. The other groups in the room are working on the same or a similar case study. When all groups have finished, the reassembled group will discuss the case studies and the answers each group developed.

CLIENT PROFILE

Mrs. F. arrives in the emergency room saying that she is pregnant and has been bleeding for the past 2 hours. Mrs. F. reports that she has been coming to the clinic for regular antenatal care and that her midwife said that all physical exams and lab tests were normal. Mrs. F. brings her antenatal record card with her.

1. What is the first thing you will do?

Mrs. F.’s BP is 94/60 and pulse is 96. She is not in shock, so you can proceed with your assessment.

2. What are some of the key questions you will ask Mrs. F., and why?

The history reveals that Mrs. F. is 36 weeks pregnant. This is confirmed by history of beginning fetal movement. She reports that she has felt the baby move normally today. She denies having any contractions or other pain. She reports no unusual activity, and admits that she had had intercourse immediately before the bleeding began.

3. What physical examination will you include in your assessment of Mrs. F., and why?

Abdominal exam confirms that Mrs. F. is 36 weeks gestation, has a longitudinal lie with head presentation. However, the head is high and floating. She is having no palpable contractions. The FHT is 140 beats/min and regular. Mrs. F.’s conjunctiva are pink. Blood is visible on her perineum in a light steady trickle. However, the flow is lessening. Mrs. F.’s ANC record shows that she has had all routine antenatal lab tests and that they were all within normal range. Her hemoglobin 2 months ago was 12 Gm. Her HIV test and RPR test were negative. At her first ANC visit, her BP was 120/70 and her pulse was 80.

4. What physical exam should be excluded from her assessment today?

5. What laboratory tests will you include in your assessment of Mrs. F. Today, and why?

- Mrs. F.’s hemoglobin today is 11 gm.
DIAGNOSIS  
(Interpreting information to identify problems/needs)

6. You have completed your assessment of Mrs. F. What is your provisional diagnosis, and why?

7. What will you do for Mrs. F. at this point?

Mrs. F. reaches 37 weeks. Her condition and the condition of the baby are still good. Her hemoglobin is 11 gm. Bleeding is intermittent, and increased this morning. Mrs. F. began having contractions every 7–10 minutes lasting 25–35 seconds this morning. What further examination might you do now, and how would you do it?
KNOWLEDGE ASSESSMENT:
MANAGEMENT OF BLEEDING IN LATE PREGNANCY

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. The most common causes of bleeding in late pregnancy are:
   a. Placenta previa
   b. Abruptio placentae
   c. A hydatidiform mole (molar pregnancy)
   d. a) and b)
   e. All of the above

2. Symptoms that may be present with a placenta previa include:
   a. Shock
   b. Relaxed (not tense) uterus
   c. Bleeding precipitated by intercourse
   d. All of the above

3. A woman with a placenta previa is more likely than the woman with a normal placenta to have:
   a. A postpartum hemorrhage
   b. A placenta accreta/increta
   c. Hypertension
   d. a) and b)
   e. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

4. The two constant signs of abruptio placentae are abdominal pain and vaginal bleeding.     ____

5. If bleeding is heavy with an abruptio placentae, the first treatment should be to give ergometrine 0.2 mg IM and wait for labor to progress.  ____

6. The first part of the physical exam for a woman with suspected placenta previa should be a vaginal exam to determine whether the placenta is placed over the placenta.  ____

7. Outpatient management of stable preterm patients with placenta previa is possible if the patient understands danger signs and self-care and is able to return to the hospital if necessary.  ____
Session Objectives

- To describe best practices for the diagnosis and management of abruptio placentae
- To describe best practices for the diagnosis and management of placenta previa

Definition

Vaginal bleeding that occurs:
- After 22 to 28 weeks of pregnancy (late) (in most African countries 28 weeks)
- During labor before childbirth

Question ??

What are the most common causes of bleeding in late pregnancy?
### Bleeding in Late Pregnancy: Antepartum Hemorrhage

- Abruptio placentae
- Placenta previa
- Others: Vasa praevia, cervical, vaginal diseases

### Question ??

**What is an abruptio placentae?**

### Bleeding in Late Pregnancy: Abruptio Placentae

**Definition:** Detachment of normally located placenta from uterus before fetus is delivered

### Abruptio Placentae

[Diagram showing revealed and concealed aspects]

**REVEALED**

**CONCEALED**
**Abruptio Placentae (cont.)**

![Image of placenta](image-url)

**Bleeding in Late Pregnancy: Diagnosis of Abruptio Placentae**

- Bleeding (may be retained in uterus) after 22 weeks gestation
- INTERMITTENT OR CONSTANT ABDOMINAL PAIN

**Symptoms sometimes present:**
- Shock
- TENSE/TENDER UTERUS
- Decreased/absent fetal movements
- Fetal distress or absent fetal heart sounds
- Ultrasound confirmation

---

**Management of Abruptio Placentae**

- Assess clotting status, e.g., bedside clotting test. (No clot after 7 minutes, or soft clot that breaks down easily, suggests coagulopathy.)
- Manage shock
- Transfuse as necessary
- If bleeding is heavy, deliver as soon as possible:
  - If the cervix is fully dilated, deliver by vacuum extraction
  - If vaginal delivery not imminent, deliver by C/section
- **Note:** In every case of abruptio placentae, be prepared for postpartum hemorrhage.

---

**Management of Abruptio Placentae (cont.)**

- If bleeding is light to moderate (the mother is not in immediate danger), the course of action depends on fetal heart sounds:
  - If fetal heart sounds are normal or absent, rupture membranes with amniotic hook or Kocher clamp:
    - If contractions are poor, augment labor with oxytocin
    - If cervix is unfavorable, perform cesarean section
  - If fetal heart sounds abnormal (< 100 or > 180 beats/min):
    - Perform rapid vaginal delivery
    - If vaginal delivery not possible, deliver by immediate C/section
Question ??

What is placenta previa?

Bleeding in Late Pregnancy: Placenta Previa

- Placenta previa: Implantation of placenta at or near cervix
- Three types:
  - Low placental implantation
  - Partial placenta previa
  - Complete placenta previa

Placenta Previa

Question ??

How would you diagnose placenta previa? What are the symptoms and signs?
Bleeding in Late Pregnancy: Diagnosis of Placenta Previa

- Bleeding after 22–28 weeks gestation

Symptoms sometimes present:
- Shock
- Bleeding may be precipitated by intercourse
- Relaxed uterus
- Fetal presentation not in pelvis/lower uterine pole feels empty
- Normal fetal condition

Bleeding in Late Pregnancy: Confirming Placenta Previa

- Localize placenta with ultrasound, if available
- If placenta previa is confirmed:
  - Plan delivery if fetus is mature
  - Manage expectantly if fetus is less than 37 weeks and bleeding is not life-threatening
- If diagnosis is uncertain:
  - Manage expectantly as placenta previa until 37 weeks gestation
  - If pregnancy is 37 weeks or more, examine under double-set up

Bleeding in Late Pregnancy: Expectant Management of Placenta Previa

- Assess amount of bleeding:
  - Do not perform a vaginal examination
  - If bleeding is heavy and continuous, deliver by cesarean section regardless of gestation
- Consider expectant management if:
  - Bleeding is light or has stopped
  - Fetus is alive but less than 37 weeks gestation

Bleeding in Late Pregnancy: Expectant Management

- Keep woman in hospital until delivery
- Correct anemia with oral iron
- Ensure blood is available for transfusion
- If bleeding recurs, weigh benefits and risks for woman and fetus of further expectant management versus delivery
Inpatient vs. Outpatient Expectant Management: Study Objective

Determine safety, efficacy and costs of inpatient and outpatient management of symptomatic placenta previa

Design: Randomized controlled trial

Inpatient vs. Outpatient Expectant Management: Study Criteria

Inclusion criteria:
- Singleton gestation
- Gestational age 24–36 weeks
- Intact membranes
- Normal fetal anatomic survey
- Reactive nonstress test

Exclusion criteria:
- Hemodynamic instability
- Other vaginal bleeding
- Three or more episodes of bleeding before presentation
- Obstetric complications
- Serious underlying medical disorder
- Lack of telephone contact
- Lack of resources to return rapidly to hospital


Maternal Outcome Measures

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Inpatient</th>
<th>Outpatient</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time pregnancy prolonged</td>
<td>38.1 ± 23.5</td>
<td>33.1 ± 22.6</td>
<td>p = 0.44</td>
</tr>
<tr>
<td>Total hospital stay</td>
<td>28.6 ± 20.3</td>
<td>10.1 ± 8.5</td>
<td>p &lt; 0.0001</td>
</tr>
<tr>
<td>Total episodes of bleeding</td>
<td>2.7 ± 2.4</td>
<td>2.3 ± 1.1</td>
<td>p = 0.45</td>
</tr>
<tr>
<td>Transfusion</td>
<td>4 (14.8%)</td>
<td>1 (3.8%)</td>
<td>p = 0.67</td>
</tr>
</tbody>
</table>


Inpatient vs. Outpatient Expectant Management: Study Conclusion

Outpatient management of stable preterm patients with placenta previa is possible if the patient understands danger signs and self-care and is able to return to the hospital if necessary.

Bleeding in Late Pregnancy: Delivery for Placenta Previa

- Plan delivery by cesarean section if:
  - Hemorrhage is severe enough to cause risk to mother
  - Fetus is at least 37 weeks gestation
  - Fetus is dead or cannot survive
  - Major praevia
- Vaginal delivery may be possible with low placental implantation
- Women with placenta previa are at high risk for postpartum hemorrhage and placenta accreta/increta

Case Study: Bleeding in Late Pregnancy

- Facilitate the reading and answering of Case Study: Bleeding in Late Pregnancy
- Discuss answers and questions that arise during discussion

Summary

- Vaginal bleeding in late pregnancy and labor can be catastrophic:
  - Evaluate rapidly
  - Resuscitate if patient in shock
  - Differentiate abruptio placentae and placenta previa because of difference in mode of delivery

References

# MODULE 18: BEST PRACTICES IN THE MANAGEMENT OF BLEEDING AFTER CHILDBIRTH—SESSION PLAN

## MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Practices in Management of Bleeding after Childbirth</td>
<td>210 min</td>
</tr>
</tbody>
</table>

### SESSION OBJECTIVES

*By the end of this session, participants will be able to:*

- Describe the significance of postpartum hemorrhage
- Discuss the causes of postpartum hemorrhage
- Discuss the prevention of postpartum hemorrhage
- Describe the management of postpartum hemorrhage
- Develop skill in bimanual compression, compression of the aorta, manual removal of the placenta, and repair of first- and second-degree lacerations

### Methods and Activities

<table>
<thead>
<tr>
<th>Activities</th>
<th>Materials/Resources</th>
</tr>
</thead>
</table>
| Illustrated presentation/discussion: Vaginal bleeding after childbirth (25 min) | - Boxlight projector  
- PowerPoint presentation  
OR  
- Overhead projector with transparencies (Handouts of presentations if no electricity) |
| Case studies (35 min) | - Case Study 1: Vaginal Bleeding after Childbirth and Case Study 2: Vaginal Bleeding after Childbirth with Answer  
- (Role Play if time allows)  
- Learning Guide and Checklist for:  
  - Repair of vaginal sulcus, periurethral and cervical tears  
  - Manual removal of placenta  
  - Internal bimanual compression of the uterus  
  - Abdominal aortic compression  
- Childbirth simulators  
- Needles/syringes and vials  
- Simulated IV infusion and administration set  
- Surgical and exam gloves  
- Simulated sink, water, soap  
- Sharps container; container for passing sharps  
- Simulated chlorine, water, bucket, measure  
- Instruments and cloth for wrapping |
| Demonstration and practice (120 min) | |
| Emergency drill (30 min) |  
- Set up the scenario for the emergency drill described in Clinical Simulation for the Management of Bleeding after Childbirth.  
- Spontaneously begin the drill while learners are practicing skills (or when in the clinical setting).  
**NOTE:** The above practice may occur over several sessions and may continue on following day(s). |
CASE STUDY 18.1: VAGINAL BLEEDING AFTER CHILDBIRTH

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

CASE STUDY

Mrs. A. is 20 years old. She gave birth to a full-term newborn 2 hours ago at home. Her birth attendant was the local traditional birth attendant (TBA), who has brought Mrs. A. to the health center because she has been bleeding heavily since childbirth. The duration of labor was 12 hours, the birth was normal and the placenta was delivered 20 minutes after the birth of the newborn.

ASSESSMENT
(History, physical examination, screening procedures/laboratory tests)

1. What will you include in your initial assessment of Mrs. A., and why?

2. What particular aspects of Mrs. A.’s physical examination will help you make a diagnosis immediately or identify her problems/needs, and why?

3. What screening procedures/laboratory tests will you include (if available) in your assessment of Mrs. A., and why?

DIAGNOSIS
(Identification of problems/needs)

You have completed your rapid assessment of Mrs. A., and your main findings include the following:

- Mrs. A.’s pulse rate is 108 beats/minute, her blood pressure is 80/60 mm Hg, her respiration rate is 24 breaths/minute and her temperature is 36.8º C.
- She is pale and sweating.
- Her uterus is soft and does not contract with fundal massage. She has heavy, bright red vaginal bleeding.
- The TBA says that she thinks the placenta and membranes were complete.

4. Based on these findings, what is Mrs. A.’s diagnosis, and why?
CARE PROVISION
(Planning and intervention)

5. Based on your diagnosis, what is your plan of care for Mrs. A., and why?

EVALUATION

Some placental tissue has been removed from Mrs. A.’s uterus. Fifteen minutes after the initiation of treatment, however, she continues to have heavy vaginal bleeding. Her bedside clotting test is 5 minutes. Her pulse is 110 beats/minute and her blood pressure 80/60 mm Hg.

6. Based on these findings, what is your continuing plan of care for Mrs. A., and why?
CASE STUDY 18.2: VAGINAL BLEEDING AFTER CHILDBIRTH

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

CASE STUDY

Mrs. B. is a 30-year-old, para four. She gave birth at the health center to a full-term healthy newborn weighing 4.2 kg. She was given ergometrine 0.2 mg after the birth of the newborn. The placenta was delivered 5 minutes later, without complication. Half an hour after childbirth, however, Mrs. B. reports that she has heavy vaginal bleeding.

ASSESSMENT

(History, physical examination, screening procedures/laboratory tests)

1. What will you include in your initial assessment of Mrs. B., and why?

2. What particular aspects of Mrs. B.’s physical examination will help you make a diagnosis immediately or identify her problems/needs, and why?

3. What screening procedures/laboratory tests will you include (if available) in your assessment of Mrs. B., and why?

DIAGNOSIS

(Identification of problems/needs)

You have completed your assessment of Mrs. B. and your main findings include the following:

- Mrs. B.’s pulse rate is 88 beats/minute, her blood pressure is 110/80 mm Hg, her respiration rate is 18 breaths/minute and her temperature is 37º C.
- Her uterus is firm and well contracted. The placenta is complete.
- She has no perineal trauma. Examination of the vagina and cervix is difficult because she continues to have heavy vaginal bleeding; therefore, tears of the cervix and vagina have not yet been ruled out.

4. Based on these findings, what is Mrs. B.’s diagnosis, and why?

CARE PROVISION

(Planning and intervention)

5. Based on your diagnosis, what is your plan of care for Mrs. B., and why?
EVALUATION

One hour after childbirth, Mrs. B. has a cervical tear repaired.

6. Based on these findings, what is your continuing plan of care for Mrs. B., and why?
ROLE PLAY: COMMUNICATING ABOUT POSTPARTUM COMPLICATIONS

DIRECTIONS

The facilitator/teacher will select three learners to perform the following roles: skilled provider, postpartum patient and support person. The three learners participating in the role play should take a few minutes to prepare for the activity by reading the background information provided below. The remaining learners, who will observe the role play, should at the same time read the background information.

The purpose of the role play is to provide an opportunity for learners to appreciate the importance of good interpersonal communication skills when providing care for a woman who experiences a postpartum complication.

PARTICIPANT ROLES

Provider: The provider is an experienced midwife who has good interpersonal communication skills.

Patient: Mrs. A. is 20 years old. She gave birth at home 2 hours ago.

Support person: Village traditional birth attendant (TBA) who attended Mrs. A.’s birth.

SITUATION

Mrs. A. has been brought to the health center by the TBA because she has been bleeding heavily since childbirth 2 hours ago. The duration of labor was 12 hours and the TBA reports that there were no complications. The midwife has assessed Mrs. A. and treated her for shock and atonic uterus. Although the bleeding has decreased since Mrs. A. first arrived at the health center, her uterus is not well contracted, despite fundal massage and the administration of oxytocin. Mrs. A., who is very frightened, must be transferred to the district hospital for further management. The TBA is anxious and feels guilty about Mrs. A.’s condition. The midwife must explain the situation to Mrs. A. and the TBA and attempt to provide emotional support and reassurance as preparations are made for transfer.

FOCUS OF THE ROLE PLAY

The focus of the role play is the interpersonal interaction among the midwife, Mrs. A. and the TBA, and the appropriateness of the information provided and the emotional support and reassurance offered.

DISCUSSION QUESTIONS

The teacher should use the following questions to facilitate discussion after the role play:
1. How did the midwife explain the situation to Mrs. A. and the TBA and the need to transfer Mrs. A. to the district hospital?

2. How did the midwife demonstrate emotional support and reassurance during her interaction with Mrs. A. and the TBA?

3. What verbal/nonverbal behaviors did Mrs. A. and the TBA use that would indicate they felt supported and reassured?
## SKILLS PRACTICE SESSION: INTERNAL BIMANUAL COMPRESSION, MANUAL REMOVAL OF PLACENTA, AORTIC COMPRESSION, REPAIR OF VAGINAL SULCUS, PERIURETHRAL AND CERVICAL LACERATION

<table>
<thead>
<tr>
<th>PURPOSE</th>
<th>INSTRUCTIONS</th>
<th>RESOURCES</th>
</tr>
</thead>
</table>
| The purpose of this activity is to enable learners to practice those psychomotor skills necessary to manage bleeding after childbirth and to achieve competency in these skills. | This activity should be conducted in a simulated setting. | • Childbirth simulator  
• Pieces of foam for repair or 1st and 2nd degree lacerations  
• Needles and syringes  
• High-level disinfected or surgical gloves  
• Gauntlet gloves  
• Personal protective barriers  
• Episiotomy/Laceration Repair kit/pack  
• 0.5% chlorine solution and receptacle for decontamination  
• Leak-proof container or plastic bag |
| Learners should review Learning Guides for: Bimanual Compression, Manual Removal of Placenta, Aortic Compression, Repair of 1st and 2nd Degree Laceration before beginning the activity. | The facilitator/teacher should demonstrate the steps/tasks in each learning guide one at a time. Under the guidance of the facilitator/teacher, learners should then work in pairs and practice the steps/tasks in each individual Learning Guide and observe each other’s performance; while one learner performs the skill, the second learner should use the relevant section of each Learning Guide to observe performance. Learners should then reverse roles. | Learning Guides: Bimanual Compression, Manual Removal of Placenta, Aortic Compression, Repair of 1st and 2nd Degree Laceration |
| Learners should be able to perform the steps/tasks relevant each skill before skills competency is assessed in a simulated setting. | | Checklists: Bimanual Compression, Manual Removal of Placenta, Aortic Compression, Repair of 1st and 2nd Degree Laceration |
CLINICAL SIMULATION FOR THE MANAGEMENT OF VAGINAL
BLEEDING AFTER CHILDBIRTH

Purpose: The purpose of this activity is to provide a simulated experience for participants to practice problem-solving and decision-making skills in the management of bleeding after childbirth, with emphasis on thinking quickly and reacting (intervening) rapidly.

Instructions: The activity should be carried out in the most realistic setting possible, such as the labor and delivery area of a hospital, clinic or maternity center, where equipment and supplies are available for emergency interventions.

- One participant should play the role of patient and a second participant the role of skilled provider. Other participants may be called on to assist the provider.
- The trainer will give the participant playing the role of provider information about the patient’s condition and ask pertinent questions, as indicated in the left-hand column of the chart below.
- The participant will be expected to think quickly and react (intervene) rapidly when the trainer provides information and asks questions. Key reactions/responses expected from the participant are provided in the right-hand column of the chart below.
- Procedures such as starting an IV and bimanual examination should be role played, using the appropriate equipment.
- Initially, the trainer and participant will discuss what is happening during the simulation in order to develop problem-solving and decision-making skills. The italicized questions in the simulation are for this purpose. Further discussion may take place after the simulation is completed.
- As the participant’s skills become stronger, the focus of the simulation should shift to providing appropriate care for the life-threatening emergency situation in a quick, efficient and effective manner. All discussion and questioning should take place after the simulation is over.

Resources: Learning Guides for Bimanual Compression, sphygmomanometer, stethoscope, equipment for starting an IV infusion, oxygen cylinder, gauge, self-inflating mask, syringes and vials, vaginal speculum, sponge forceps, high-level disinfected or sterile surgical gloves.
<table>
<thead>
<tr>
<th>SCENARIO (Information provided and questions asked by the facilitator/trainer)</th>
<th>KEY REACTIONS/RESPONSES (Expected from participants)</th>
</tr>
</thead>
</table>
| 1. Mrs. B. is 24 years old and has just given birth to a healthy baby girl after 7 hours of labor. Active management of the third stage was performed, and the placenta and membranes were complete. The midwife who attended the birth left the hospital at the end of her shift. Approximately 30 minutes later, a nurse rushes to tell you that Mrs. B. is bleeding profusely.  
- What will you do? | • Shouts for help to urgently mobilize all available personnel  
• Makes a rapid evaluation of Mrs. B.’s general condition, including vital signs (temperature, pulse, blood pressure and respiration rate), level of consciousness, color and temperature of skin  
• Explains to Mrs. B. what is going to be done, listens to her and responds attentively to her questions and concerns |
| 2. On examination, you find that Mrs. B.’s pulse is 120 beats/minute and weak and her blood pressure is 86/60 mm Hg. Her skin is not cold and clammy.  
- What is Mrs. B.’s problem?  
- What will you do now? | • States that Mrs. B. is in shock from postpartum bleeding  
• Palpates the uterus for firmness  
• Asks one of the staff that responded to her/his shout for help to start an IV infusion, using a large-bore cannula and normal saline or Ringer’s lactate at a rate of 1 L in 15–20 minutes with 10 units oxytocin  
• While starting the IV, collects blood for appropriate tests (hemoglobin, blood typing and cross matching, and bedside clotting test for coagulopathy) |
| Discussion Question 1: How do you know when a woman is in shock? | • Expected Responses: Pulse greater than 110 beats/minute; systolic blood pressure less than 90 mm Hg; cold, clammy skin; pallor; respiration rate greater than 30 breaths/minute; anxious and confused or unconscious |
| 3. You find that Mrs. B.’s uterus is soft and not contracted.  
- What will you do now? | • Massages the uterus to expel blood and blood clots and stimulate a contraction  
• Starts oxygen at 6–8 L/minute  
• Catheterizes bladder  
• Covers Mrs. B. to keep her warm  
• Elevates legs  
• Continues to monitor (or has assistant monitor) blood loss, pulse and blood pressure |
| 4. After 5 minutes, Mrs. B.’s uterus is well contracted, and the bleeding has slowed to a small occasional trickle.  
- What will you do now? | • Continue to monitor BP, pulse, uterine firmness and blood loss every 15 minutes for 2 hours, and urine output every hour.  
• Asks one of the staff members assisting to locate placenta and examines for missing pieces |
### SCENARIO

(Information provided and questions asked by the facilitator/trainer)

5. On further examination of the placenta, you find that it is complete. On examination of Mrs. B.’s cervix, vagina and perineum, you find a cervical tear. She continues to bleed heavily.

- What will you do now?

### KEY REACTIONS/RESPONSES

(Expected from participants)

- Prepares to repair the cervical tear
- Tells Mrs. B. what is happening, listens to her concerns and provides reassurance
- Has a staff member assisting check Mrs. B.’s vital signs

### Discussion Question 2

What would you have done if examination of the placenta had shown a missing piece (placenta incomplete)?

**Expected Responses:**

- Explain the problem to Mrs. B. and provide reassurance.
- Give pethidine and diazepam IV slowly or use ketamine.
- Give a single dose of prophylactic antibiotics (ampicillin 2 g IV plus metronidazole 500 mg IV OR cefazolin 1 g IV plus metronidazole 500 mg IV).
- Use sterile or high-level disinfected gloves to feel inside the uterus for placental fragments and remove with hand, ovum forceps or large curette.

6. Forty-five minutes have passed since treatment for Mrs. B. was started. You have just finished repairing Mrs. B.’s cervical tear. Her pulse is now 100 beats/minute, blood pressure 96/60 mm Hg and respiration rate 24 breaths/minute. She is resting quietly.

- What will you do now?

**Discussion following clinical simulation may ask:** what was the benefit of being prepared before the emergency? What could have been done better? What is the importance of being able to access emergency equipment/supplies at all time?
KNOWLEDGE ASSESSMENT: VAGINAL BLEEDING AFTER CHILDBIRTH

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. What measures can be taken to prevent postpartum hemorrhage?
   a. Active management of the third stage of labor
   b. Reducing length of second stage of labor by encouraging the woman to push during active second stage
   c. Avoiding perineal trauma
   d. a) and b)
   e. a) and c)
   f. All of the above

2. Management of postpartum hemorrhage caused by an atonic uterus involves
   a. Massaging the uterus through the abdominal wall to expel clots and cause uterine contraction
   b. Helping the woman to urinate or catheterizing the bladder
   c. Giving an oxytocic drug
   d. All of the above

3. Internal bimanual compression of the uterus
   a. Does not require use of sterile or HLD gloves since it is an emergency situation and the hand does not enter the uterus
   b. Requires that pressure be applied on the anterior wall of the uterus only
   c. Requires that compression be maintained until bleeding is controlled and the uterus contracts
   d. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

4. Vaginal bleeding in excess of 500 mL after childbirth is defined as postpartum hemorrhage. ______

5. Continuous slow bleeding or sudden bleeding following childbirth is an emergency requiring early and aggressive intervention. ______

6. Immediate postpartum hemorrhage is always due to atonic uterus. ______

7. A complete placenta and a contracted uterus, accompanied by immediate postpartum hemorrhage, suggest that tears of the cervix, vagina or perineum may be present. ______
8. Delayed postpartum hemorrhage is always characterized by light, irregular vaginal bleeding.

9. Active management of the third stage of labor should be practiced on all women because it reduces the incidence of postpartum hemorrhage due to uterine atony.

10. Bimanual compression of the uterus is the first step in management of atonic uterus.

11. When performing abdominal aortic compression to control postpartum hemorrhage, the point of compression is just below and slightly to the right of the umbilicus.

12. If a retained placenta is undelivered after 30 minutes of oxytocin stimulation and the uterus is contracted, cord traction and fundal pressure should be attempted.

13. Antibiotics are useful in a case of delayed postpartum hemorrhage only if the woman has a fever.
Best Practices in the Management of Bleeding after Childbirth

Best Practices in Maternal and Newborn Care

Session Objectives

By end of session, participants will be able to:

- Describe the significance of postpartum hemorrhage
- Discuss the causes of postpartum hemorrhage
- Discuss the prevention of postpartum hemorrhage
- Describe the management of postpartum hemorrhage

Vaginal Bleeding after Childbirth

WARNING: Rapid action in response to PPH is critical!

More than half of all maternal deaths occur within 24 hours of childbirth, mostly due to excessive bleeding. Uterine atony is the major factor of postpartum hemorrhage (PPH), which causes more than one-quarter of all maternal deaths worldwide.

Definition

- Vaginal bleeding in excess of 500 mL or any amount sufficient enough to cause cardiovascular compromise
- Primary and secondary PPH
- Facts:
  - Estimated amounts of blood loss are notoriously low, often half the actual loss
  - The lower the Hb level, the poorer is the woman’s tolerance of blood volume loss
Question ??

What are the causes of postpartum hemorrhage?

The Causes

- Atonic uterus
- Retained placenta or fragments
- Tears of uterus, cervix, vagina, perineum
- Coagulation defects
- Inversion of uterus
- Infection (delayed PPH)

Management

- This is a life-threatening complication, which must be managed promptly and effectively.
- Get all the help you can.
- Prevention is the best management.

Question ?

What measures can we take to prevent postpartum hemorrhage?
Prevention

CLIENT CARE
- Prevent prolonged labor
- Active management of the third stage of labor
- Avoid perineal/vaginal trauma
- Monitor closely

EMERGENCY PREPAREDNESS
- Have emergency PPH pack ready

Prevention: Be Prepared

ALL women are at risk of PPH!
Women who are predisposed to fatal consequences of PPH include women with:
- Over-distended uterus (twins, big baby, polyhydramnios)
- Prolonged labor
- Severe pre-eclampsia/eclampsia
- Prolonged intrauterine death
- APH (weakens)
- Anemia (weakens)

ICM/FIGO Joint Statement on Active Management of the Third Stage of Labor (AMSTL)

- AMSTL has been proven to reduce the incidence of postpartum hemorrhage, reduce the quantity of blood loss and reduce the use of transfusion
- AMSTL should be offered to all women who are giving birth
- Every attendant at birth needs to have the knowledge, skills and critical judgment needed to carry out AMSTL

Question ??

What are the first things you should do when you encounter a woman with bleeding after third stage (postpartum hemorrhage)?
General Management Steps

- CALL FOR HELP
- Perform rapid evaluation (vital signs BP, pulse, RR, pallor and cause)
- Massage uterus
- If shock is present, start immediate resuscitation:
  - Start IV infusion 1 liter/15 min.
  - Take blood for grouping and cross-matching
  - Give oxygen
  - Elevate foot end and keep woman warm

IV Fluid Replacement: In Shock

- Start resuscitation with intravenous fluids (normal saline or Ringer’s lactate)
- Use large-bore cannula (16 or bigger)
- Volume to give:
  - First 1,000 mL (500 ml x 2) rapidly in 15–20 min.
  - Give AT LEAST 2000 mL (500 X 4) IN FIRST HOUR
  - Aim to replace 2–3x the volume of estimated blood loss
  - If condition stabilizes, then adjust rate to 1,000 mL/6 hr
- Monitor BP, pulse every 15 min. and urine output hourly (> 30 mL/hr)
- Avoid dextrans; they interfere with grouping and cross-matching as well as with coagulation of blood

Management: Rapid Assessment

Assess for s/s of following conditions and perform appropriate action before proceeding with additional care:
- Uterine atony (uterus soft/not contracted)
- Tears of perineum, vagina, cervix
- Retained placenta or placental fragments
- Ruptured or inverted uterus
- Delayed postpartum hemorrhage (PPH)

Vaginal Bleeding after Childbirth: Management

- If s/s of uterine atony:
  - Massage uterus
  - Start IV infusion (plus oxytocin 20 units/liter IV fluids) or ORS
  - Give oxytocin 10 units IM*
  - Ensure urination (catheterize if needed)

*If not able to start IV
Vaginal Bleeding after Childbirth: Management (cont.)

- If bleeding continues:
  - Perform bimanual compression of uterus OR compression of abdominal aorta (per next two slides)
  - Give additional oxytocics, e.g., misoprostol, ergometrine, prostaglandins if available.
  - If bleeding continues, facilitate urgent referral/transfer

- If bleeding stops, proceed with additional care, plus measure woman’s hemoglobin in 2 or 3 hours

Internal Bimanual Compression of the Uterus

- Wearing HLD gloves, insert hand into vagina; form fist
- Place fist into anterior fornix and apply pressure against anterior wall of uterus
- With other hand, press deeply into abdomen behind uterus, applying pressure against posterior wall of uterus
- Maintain compression until bleeding is controlled and uterus contracts

Compression of Abdominal Aorta

- Apply downward pressure with closed fist over abdominal aorta through abdominal wall (just above umbilicus slightly to patient’s left)
- With other hand, palpate femoral pulse to check adequacy of compression:
  - Pulse palpable = adequate
  - Pulse not palpable = inadequate
- Maintain compression until bleeding is controlled

Atonic Uterus!

First action is to massage uterus

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE &amp; ROUTE</th>
<th>CONT. DOSE</th>
<th>MAX DOSE</th>
<th>CONTRA-INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>OXYTOCIN</td>
<td>IM 10 U OR IV 20 U in 1000 mL NS at &gt;60 drp/min OR 5-10 U slow IV push</td>
<td>IV 20 u in 1,000 mL at 40 drps/min.</td>
<td>Not &gt; 40 U infused at rate of 0.02–0.04 U/min.</td>
<td>No IV admin., not even slow IV push unless IV fluids are running</td>
</tr>
<tr>
<td>ERGOMETRINE</td>
<td>IM OR IV Slowly 0.2 mg</td>
<td>Repeat 0.2 mg after 15 min. if required every 4 hours</td>
<td>Five doses (Total 1.6 mg)</td>
<td>High BP Heart disease</td>
</tr>
</tbody>
</table>
**Atonic Uterus (cont.)**

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE &amp; ROUTE</th>
<th>CONT. DOSE</th>
<th>MAX DOSE</th>
<th>CAUTIONS &amp; CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>MISOPROSTOL (CYTOTEC)</td>
<td>ORAL/SL intravag, rectal</td>
<td>200 mg</td>
<td>2000 mg</td>
<td>Asthma, Heart Dis*</td>
</tr>
<tr>
<td></td>
<td>200-800 mcg (600mcg)</td>
<td>every 4 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROSTAGLANDIN F2a</td>
<td>IM only 0.25mg</td>
<td>0.25 mg</td>
<td>Total 8 doses=2 mg</td>
<td>Asthma, Heart Dis*</td>
</tr>
<tr>
<td></td>
<td>Every 15 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Management of PPH**

- If no s/s of uterine atony:
  - Examine vagina, perineum, cervix for tears
  - Start IV infusion or oral rehydration solution (ORS) – if woman is conscious
  - Keep woman warm; elevate legs
  - Ensure urination (catheterize if needed)
  - Proceed with assessment

**Question ??**

If a woman with postpartum hemorrhage has no signs of atonic uterus, what should you do?

**Additional Management (cont.)**

- If s/s of tears:
  - If extensive tears (3rd or 4th degree), facilitate urgent referral/transfer
  - If 1st or 2nd degree tears, perform repairs
- If s/s of retained placenta, perform appropriate management to deliver placenta
- If s/s of retained placental fragments, perform appropriate management to remove fragments
Local Anesthesia

Lidocaine:
- Only use in concentration of 0.5% (drug is usually available in 1% and 2% preparations)
- If more than 40 mL is required, add adrenaline to delay dispersion
- MAX safe dose is 4mg/kg BW for plain and 7mg/kg BW with adrenaline
- Anesthetic effect can last for 2hrs
- Dose can be repeated after 2 hr PRN
- Avoid injecting into vessel

Retained Placenta

- If you can see the placenta, ask the woman to push it out
- If you can feel the placenta in the vagina, remove it
- If the placenta is still not delivered:
  - Give oxytocin 10 units IM (if not already given for AMTSL) and attempt CCT with the next contraction
  - Catheterize the bladder using aseptic technique if not already done
  - If CCT unsuccessful, attempt manual removal of the placenta

Managing Retained Placenta

- Ensure bladder is empty
- Apply controlled cord traction; If it fails,
- Repeat oxytocin 10u IM: If no success of CCT in 30 min:
  - Attempt manual removal of placenta:
    - Give Pethidine and diazepam or Ketamine
    - Give antibiotics: (Ampicillin 2g + Metronidazole 500 mg)
    - Perform procedure and examine placenta for completeness
    - Give Oxytocin 20 U/1,000 mL NS or RL at 60 dpm
    - Monitor BP, pulse, pad and urine output closely
    - Add ergot or prostaglandin if bleeding continues
- Transfuse PRN and treat for anemia

Anesthesia and Analgesia for Short Procedures < 30 Minutes

- Pethidine 1mg/kg BW IM or IV slowly (max 100 mg dose)
- Give Promethaxine (Phenergan) if vomiting occurs
- Diazepam 10mg IV at rate of 1mg every 2 min.
- Monitor RR closely; stop if RR<10/min

**DO NOT MIX THE TWO DRUGS IN SAME SYRINGE**

- Ketamine for procedures < 60 min:
  - Dose 6-10 mg/kg BW by IM or IV bolus or IV Infusion
  - 2 mg/kg BW IV slowly last for 15 min
  - 200 mg in 1 liter D/S at 20 dpm infusion for longer procedures
  - Give atropine 0.6 mg IM as pre-medication
  - Give O2 6-8l/min by mask
  - Add diazepam 10 mg IV to avoid hallucinations

**CONTRAINDED IN HIGH BP AND HEART DISEASE**
Retained Placenta (cont.)

- If bleeding continues, ACT NOW! Facilitate urgent referral/transfer
- If bleeding stops, continue with basic care
- 2 to 3 hours after bleeding stops, measure the woman’s hemoglobin:
  - If Hgb less than 7g/dL, facilitate urgent transfer
  - If Hgb is 7–11g/dL, treat anemia with iron/folate
- DO NOT give ergometrine as it causes tonic contractions
- AVOID forceful CCT and fundal pressure as they may cause uterine inversion

Vaginal Bleeding after Childbirth: Management (cont.)

- If s/s of retained placental fragments:
  - Give uterotonic drug according to guidelines
  - Assess cervix for dilation

- If cervix is not dilated, facilitate urgent referral/transfer
- If cervix is dilated, perform appropriate management to remove fragments/tissue:
  - If bleeding continues, perform bimanual compression of uterus OR compression of abdominal aorta
  - NOTE: Very adherent tissue may be placenta accreta. Efforts to extract fragments that do not separate easily may result in heavy bleeding or uterine perforation, which usually requires hysterectomy.

- If s/s of ruptured uterus, facilitate urgent referral/transfer
- If s/s of inverted uterus, perform manual correction of inverted uterus
Vaginal Bleeding after Childbirth: Additional Management

- If bleeding continues, facilitate urgent referral/transfer
- If bleeding stops, proceed with additional care, plus measure woman’s hemoglobin in 2 or 3 hours:
  - If hemoglobin is less than 7g/dL, facilitate urgent referral
  - If hemoglobin 7–11g/dL, treat anemia with iron/folate

Case Study

- Adisa Mohammed was rushed to your clinic by her family. She delivered at home 2 hrs ago and has since been bleeding profusely. She is now very weak. You are the health worker at the clinic:
  - What first steps will you take?
  - What rapid assessments will you undertake (history and examination)?

Case Study (cont.)

- You note that she is very pale and barely alive. Her BP is 80/50 mmHg and Pulse 110/min. Her uterus is lax and she is still bleeding actively PV. You are told that the placenta was delivered after the baby was born.
  - What next resuscitative actions and assessments will you undertake?

Group Work

- Participants will divide into groups of 3 or 4.
- Half of the groups will receive Case Study 1: Vaginal Bleeding after Childbirth and the other groups will receive Case Study 2: Vaginal Bleeding after Childbirth.
- Groups will read case studies and answer questions.
- Larger group will reassemble and discuss each case study.
References


## SUPPLEMENTARY MODULE 18.1: BEST PRACTICES IN INSPECTION AND REPAIR OF VAGINAL SULCUS, PERIURETHRAL AND CERVICAL TEARS—SESSION PLAN

### MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Practices in Inspection and Repair of Vaginal Sulcus, Periurethral and Cervical Tears</td>
<td>240 min</td>
</tr>
</tbody>
</table>

### SESSION OBJECTIVES

By the end of this session, participants will be able to:

- Identify vaginal sulcus, periurethral and cervical tears
- Repair vaginal sulcus, periurethral and cervical tears
- Counsel the mother about care after repair of vaginal, periurethral or cervical tears

### Methods and Activities

#### Illustrated presentation/discussion: Best practices in inspection and repair of vaginal sulcus, periurethral and cervical tears (20 min)

- Use questions and discussion throughout presentation as indicated on slides.
- Cover the following:
  - Objectives of session
  - Definition of sulcus tear, periurethral tear and cervical tear
  - Supplies needed for repair
  - Technique for repair of vaginal sulcus tear
  - Technique for repair of periurethral tear
  - Technique for repair of cervical tear
  - Counsel of woman following repair

#### Skills demonstration and practice: Repair of vaginal sulcus, periurethral and cervical tears (150 min)

- **Demonstration** (30 min)
  - Distribute learning guides so that participants can follow steps of demonstration.
- **Practice** (120 min)
  - Divide participants into three groups to practice each skill with a model. One practices while others in group follow with learning guide. Participants rotate within small group until all have practiced. They then rotate to another skill station.

[Skills demonstration and practice sessions will be divided with a break (10 min) or lunch (45 min) at appropriate time]

- Session on Best Practices in Care of the Newborn may be inserted into this session prior to skills demonstration and practice since Immediate Newborn Care is part of Normal Labor and Childbirth.

### Materials/Resources

- Boxlight projector
- PowerPoint presentation OR Overhead projector with transparencies (Handouts of presentations if no electricity)
- Blank partograph forms
- Copy (copies) of exercise
- Copy of Skills Practice Session
- Copies of Learning Guides and Checklists for Active Management of the Third Stage of Labor, Birth with Vacuum Extractor, Breech Birth, Episiotomy and Repair
- Large laminated partograph
- Childbirth simulator
- Vacuum extractor
- Newborn for use with vacuum extractor
- Syringes and vials
- High-level disinfected or surgical gloves
- Personal protective barriers
- Delivery kit/pack
- Episiotomy repair set
- Suture material and needles
- 0.5% chlorine solution and receptacle for decontam.
- Leak-proof container or plastic bag
# SKILLS PRACTICE SESSION: REPAIR OF VAGINAL SULCUS, PERIURETHRAL AND CERVICAL TEARS

<table>
<thead>
<tr>
<th>PURPOSE</th>
<th>INSTRUCTIONS</th>
<th>RESOURCES</th>
</tr>
</thead>
</table>
| The purpose of this activity is to enable learners to practice repair of vaginal sulcus, periurethral and cervical tears. | This activity should be conducted in a simulated setting. | - Childbirth simulator with baby and placenta  
- Vacuum extractor  
- Pieces of foam for episiotomy and repair  
- Syringes and vial  
- High-level disinfected or surgical gloves  
- Personal protective barriers  
- Delivery kit/pack  
- Episiotomy/Laceration Repair kit/pack  
- 0.5% chlorine solution and receptacle for decontamination  
- Leak-proof container or plastic bag |
| Learners should review Learning Guide for: Repair of Vaginal Sulcus, Periurethral and Cervical Tears before beginning the activity. | The facilitator/teacher should demonstrate the steps/tasks in each learning guide one at a time. Teacher should show each piece of equipment and explain use. Show anatomical landmarks. Facilitator/teacher must explain each step of procedure and any cautions associated with each step. Under the guidance of the facilitator/teacher, learners should then work in pairs and practice the steps/tasks in each individual Learning Guide and observe each other’s performance. Learners should then reverse roles. | Learning Guide: Repair of Vaginal Sulcus, Periurethral and Cervical Tears |
| Learners should be able to perform the steps/tasks relevant each skill before skills competency is assessed in a simulated setting. | Learners should be able to perform the steps/tasks relevant each skill before skills competency is assessed in a simulated setting. | Learning Guide: Repair of Vaginal Sulcus, Periurethral and Cervical Tears |

**Equipment/materials for vaginal sulcus and periurethral tears:**  
- 10 cc syringe with 1 ½ cc syringe  
- Bottle of 0.5% lignocaine  
- Gauze swabs  
- Needle holder  
- Scissors  
- Pick-up forceps  
- Sponge forceps  
- 2-0/3-0 chromic or vicryl sutures  
- Antiseptic  
- Sharps container  
- Decontamination container  
- Leak-proof waste container  
- Sterile gloves  
- Goggles  
- Plastic apron

**Equipment/materials for cervical tears:**  
- 10 cc syringe with 1 ½ cc syringe  
- Bottle of 0.5% lignocaine  
- Gauze swabs  
- Needle holder  
- Scissors  
- Pick-up forceps  
- Sponge forceps  
- 0-chromic sutures  
- Antiseptic  
- Sharps container  
- Decontamination container  
- Leak-proof waste container  
- Sterile gloves  
- Goggles  
- Plastic apron

**Anatomical landmarks:**  
- Apex of wound  
- Hymenal ring  
- Mucosa layer of vagina  
- Subcutaneous and subcuticular layers of perineal tissue  
- Deep muscles

**Checklist:**  
- Repair of Vaginal Sulcus, Periurethral and Cervical Tears

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*Supplementary Module 18.1: Inspection and Repair of Vaginal Sulcus, Periurethral and Cervical Tears - 2  
Best Practices in Maternal and Newborn Care Learning Resource Package*
KNOWLEDGE ASSESSMENT: REPAIR OF VAGINAL SULCUS, PERIURETHRAL AND CERVICAL TEARS

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. When repairing a vaginal sulcus, the suture is started 1 cm above the apex of the wound(s) in the vagina:
   a. To permit use of local anesthesia
   b. To preserve integrity of hymenal ring
   c. To suture any blood vessels that may have retracted away from the edges of the tear
   d. To ensure that essential layers of deep muscle are included in the repair

2. A catheter should always be placed:
   a. Prior to the repair of a vaginal sulcus tear
   b. Prior to the repair of a cervical tear
   c. Prior to repair of a periurethral tear
   d. All of the above

3. In order to visualize the edges of a cervical tear, both sides of the tear should be grasped with:
   a. Sponge forceps
   b. The hands of the assistant
   c. A toothed forcep or clamp
   d. all of the above

4. Counsel of the woman following the repair of a tear includes all of the following except:
   a. Change pads/cloths frequently enough to keep the perineum dry
   b. Get good nutrition and rest
   c. Return for suture removal 5–7 days after the repair
   d. Do not put anything into the vagina

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

5. Anesthesia is not required for repair of a vaginal sulcus tear. ______

6. After completing repair of the laceration, dispose of all materials in a plastic bag. ______
**Session Objectives**

- Define types of tears
- Describe the anesthesia needed for repair
- Describe the suture needed for repair
- Discuss some tips for repair
- Provide post-procedure counseling

**Objectives of Repair of Vaginal Sulcus, Periurethral and Cervical Tears**

- Prevent blood loss
- Facilitate return of genital tract to sexual and reproductive health

**Question ??**

What is the difference between a vaginal sulcus, periurethral and cervical tear?
### Definitions

- **Vaginal Sulcus Tear(s):** One or more lacerations/tears of one or both sides of the vagina
- **Periurethral Tear(s):** One or more lacerations/tears near the urethra
- **Cervical Tear(s):** One or more lacerations/tears of the cervix

### Question ??

**What anesthesia is generally used for repair of a vaginal sulcus or periurethral tear?**

### Anesthesia for Repair of Vaginal Sulcus or Periurethral Tear

- Anesthesia of choice - 0.5% lignocaine.
- Use approximately 10 mL of lignocaine. If more than 40 mL is needed, add adrenaline to the solution. Do not use more than 50 mL.
- Aspirate to be sure that no vessel is penetrated.
- Anesthetize at least 2 minutes prior to suturing, and test that anesthesia has been effective.

### Question ??

**What anesthesia is generally used for repair of a cervical tear?**
Anesthesia for Cervical Tear

- Anesthesia is not required for most cervical tears:
  - Emotional support and encouragement is needed. Relief of anxiety is important in reducing discomfort.
  - If tears are high and extensive, give pethidine and diazepam IV slowly (do not mix in same syringe) or use ketamine.

Suture

- For vaginal sulcus tear, use 2–0 chromic or vicryl suture
- For periurethral tears, use 3–0 or 4–0 chromic or vicryl suture
- For cervical tears, use 0 chromic suture

Tips

- Start suture 1 cm above apex of vaginal or cervical tear to catch any vessels that may have retracted
- Insert a catheter before beginning repair of periurethral tears to prevent damage to urethra
- Always use forceps, NEVER your fingers, to handle/maneuver needle

Post-Procedure Counseling

- Change pad/cloths frequently to keep wound dry
- Do sitz/warm soapy baths 3–4 times per day
- Do not insert anything in the vagina
- Get rest and good nutrition
- Delay intercourse to avoid breaking sutures
- Do not return for suture removal as they are absorbable
- Return after 4–6 days for check-up
Reference

## MODULE 19: BEST PRACTICES IN MANAGEMENT OF HEADACHE, CONVULSIONS, LOSS OF CONSCIOUSNESS OR HIGH BLOOD PRESSURE—SESSION PLAN

### MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Practices in Management of Headache, Convulsions, Loss of Consciousness or High Blood Pressure</td>
<td>60 min</td>
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</table>

### SESSION OBJECTIVES

*By the end of this session, participants will be able to:*

- Discuss best practices for diagnosing and managing hypertension, pre-eclampsia and eclampsia
- Describe strategies for controlling hypertension
- Describe strategies for preventing and treating convulsions in eclampsia

### Methods and Activities | Materials/Resources
---|---
Illustrated presentation/discussion: Best practices in management of headache, blurred vision, convulsions, loss of consciousness or high blood pressure (30 min)  
- Use questions and discussion throughout presentation as indicated on slides.  
- Respond to questions as they arise during presentation.  
- Cover the following topics:  
  - Types of hypertension—recognition:  
    - Chronic  
    - Pregnancy-induced:  
      - Pre-eclampsia  
      - Eclampsia  
  - Preventing eclampsia  
  - Management of eclampsia  

- Case studies: 1) High Blood Pressure during Pregnancy; 2) Pregnancy-Induced Hypertension at 30 Weeks; 3) Pregnancy-Induced Hypertension at 37 Weeks (30 min)  
- Small group work as described on case studies  
- General discussion to summarize

- Clinical simulation/drill (This drill can be conducted at any time during clinical or lab work, or can be staged at end of this session.)  
  - Have report and discussion from each group.  
  - Summarize results from group discussion.

- Boxlight projector  
- PowerPoint presentation  
- Overhead projector with transparencies (Handouts of presentations if no electricity)  
- Case Studies: High Blood Pressure during Pregnancy; Pregnancy-Induced Hypertension at 30 Weeks; Pregnancy-Induced Hypertension at 37 Weeks  
- Clinical Simulation for the Management of Headaches, Blurred Vision, Convulsions, Loss of Consciousness or High Blood Pressure  
- For Clinical Simulation: sphygmomanometer, stethoscope, equipment for IV infusion, syringes and vials, oxygen cylinder, gauge, self-inflating mask, equipment for bladder catheterization, reflex hammer (or similar device), high-level disinfected or sterile surgical gloves
CASE STUDY 19.1: HIGH BLOOD PRESSURE DURING PREGNANCY

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

CASE STUDY

Mrs. A. is 34 years old. She is 18 weeks pregnant. She attended the antenatal clinic 1 week ago, when it was found that her diastolic blood pressure was 100 mm Hg on two readings taken 4 hours apart. Mrs. A. reports that she has had high blood pressure for years, which has not been treated with antihypertensive drugs. She does not know what her blood pressure was before she became pregnant. She moved to the district 6 months ago and her medical record is not available. She has come back to the antenatal clinic, as requested, 1 week later for follow-up.

ASSESSMENT
(History, physical examination, screening procedures/laboratory tests)

1. What will you include in your initial assessment of Mrs. A., and why?

2. What particular aspects of Mrs. A.’s physical examination will help you make a diagnosis or identify her problems/needs, and why?

3. What screening procedures/laboratory tests will you include (if available) in your assessment of Mrs. A., and why?

DIAGNOSIS
(Identification of problems/needs)

You have completed your assessment of Mrs. A. and your main findings include the following:

Mrs. A.’s diastolic blood pressure is 100 mm Hg. Her urine is negative for protein. She is feeling well and has no adverse symptoms (headache, visual disturbance or upper abdominal pain). Uterine size is consistent with dates. It has not been possible to obtain Mrs. A.’s medical record.

4. Based on these findings, what is Mrs. A.’s diagnosis, and why?

CARE PROVISION
(Planning and intervention)

5. Based on your diagnosis, what is your plan of care for Mrs. A., and why?
EVALUATION

Mrs. A. returns to the antenatal clinic in 1 week. She feels well and has no adverse symptoms. Her diastolic blood pressure is 100 mm Hg. Her medical record has been obtained and her pre-pregnancy blood pressure is noted as 140/100 mm Hg.

6. Based on these findings, what is your continuing plan of care for Mrs. A., and why?
CASE STUDY 19.2: PREGNANCY-INDUCED HYPERTENSION AT 30 WEEKS

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

CASE STUDY

Mrs. B. is 16 years old. She is 30 weeks pregnant and has attended the antenatal clinic three times. All findings were within normal limits until her last antenatal visit 1 week ago. At that visit, it was found that her blood pressure was 130/90 mm Hg. Her urine was negative for protein. The fetal heart sounds were normal, the fetus was active and uterine size was consistent with dates. She has come to the clinic today, as requested, for follow-up.

ASSESSMENT

(History, physical examination, screening procedures/laboratory tests)

1. What will you include in your initial assessment of Mrs. B., and why?

2. What particular aspects of Mrs. B.’s physical examination will help you make a diagnosis, and why?

3. What screening procedures/laboratory tests will you include in your assessment of Mrs. B., and why?

DIAGNOSIS

(Identification of problems/needs)

You have completed your assessment of Mrs. B. and your main findings include the following:

- Mrs. B.’s blood pressure is 130/90 mm Hg, and she has proteinuria 1+.
- She has no symptoms suggesting severe pre-eclampsia (headache, visual disturbance, upper abdominal pain, convulsions or loss of consciousness).
- The fetus is active and fetal heart sounds are normal. Uterine size is consistent with dates.

4. Based on these findings, what is Mrs. B.’s diagnosis, and why?

CARE PROVISION

(Planning and intervention)

5. Based on your diagnosis, what is your plan of care for Mrs. B., and why?
EVALUATION

Mrs. B. attends antenatal clinic on a twice-weekly basis, as requested. Her blood pressure remains the same, she continues to have proteinuria 1+, and the fetal growth is normal. Four weeks later, however, her blood pressure is 130/110 mm Hg and she has proteinuria 2+. Mrs. B. has not suffered headache, blurred vision, upper abdominal pain, convulsions or loss of consciousness and says that she feels well. However, she finds it very tiring to have to travel to the clinic by bus twice weekly for follow-up and wants to come only once a week.

6. Based on these findings, what is your continuing plan of care for Mrs. B., and why?
CASE STUDY 19.3: PREGNANCY-INDUCED HYPERTENSION AT 37 WEEKS

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

CASE STUDY

Mrs. C. is 23 years old. She is 37 weeks pregnant and has attended the antenatal clinic four times. No abnormal findings were detected during antenatal visits, the last of which was 1 week ago. Mrs. C. has been counseled about danger signs in pregnancy and what to do about them. Her husband has brought her to the emergency department of the district hospital because she developed a severe headache and blurred vision this morning.

ASSESSMENT

(History, physical examination, screening procedures/laboratory tests)

1. What will you include in your initial assessment of Mrs. C., and why?

2. What particular aspects of Mrs. C.’s physical examination will help you make a diagnosis or identify her problems/needs, and why?

3. What screening procedures/laboratory tests will you include (if available) in your assessment of Mrs. C., and why?

DIAGNOSIS

(Identification of problems/needs)

You have completed your assessment of Mrs. C. and your main findings include the following:

- Mrs. C.’s blood pressure is 160/110 mm Hg, and she has proteinuria 3+.
- She has a severe headache that started 3 hours ago. Her vision became blurred 2 hours after the onset of headache. She has no upper abdominal pain and has not suffered convulsions or loss of consciousness. Her reflexes are normal.
- The fetus is active and fetal heart sounds are normal. Uterine size is consistent with dates.

4. Based on these findings, what is Mrs. C.’s diagnosis, and why?

CARE PROVISION

(Planning and intervention)

5. Based on your diagnosis, what is your plan of care for Mrs. C., and why?
EVALUATION

Two hours following the initiation of treatment, Mrs. C.’s diastolic blood pressure is 100 mm Hg. She has not had a convulsion, but still has a headache. She does not have coagulopathy. During the past 2 hours, however, Mrs. C.’s urinary output has dropped to 20 mL/hour. The fetal heart rate has ranged between 120 and 140 beats/minute.

6. Based on these findings, what is your continuing plan of care for Mrs. C., and why?
CLINICAL SIMULATION FOR THE MANAGEMENT OF HEADACHES, BLURRED VISION, CONVULSIONS, LOSS OF CONSCIOUSNESS OR HIGH BLOOD PRESSURE

**Purpose:** The purpose of this activity is to provide a simulated experience for participants to practice problem-solving and decision-making skills in the management of headaches, blurred vision, convulsions, loss of consciousness or elevated blood pressure, with emphasis on thinking quickly and reacting (intervening) rapidly.

**Instructions:** The activity should be carried out in the most realistic setting possible, such as the labor and delivery area of a hospital, clinic or maternity center, where equipment and supplies are available for emergency interventions.

- One participant should play the role of patient and a second participant the role of skilled provider. Other participants may be called on to assist the provider.
- The trainer will give the participant playing the role of provider information about the patient’s condition and ask pertinent questions, as indicated in the left-hand column of the chart below.
- The participant will be expected to think quickly and react (intervene) rapidly when the trainer provides information and asks questions. Key reactions/responses expected from the participant are provided in the right-hand column of the chart below.
- Procedures such as starting an IV and giving oxygen should be role-played, using the appropriate equipment.
- Initially, the trainer and participant will discuss what is happening during the simulation in order to develop problem-solving and decision-making skills. The italicized questions in the simulation are for this purpose. Further discussion may take place after the simulation is completed.
- As the participant’s skills become stronger, the focus of the simulation should shift to providing appropriate care for the life-threatening emergency situation in a quick, efficient and effective manner. All discussion and questioning should take place after the simulation is over.

**Resources:** Sphygmomanometer, stethoscope, equipment for starting an IV infusion, syringes and vials, oxygen cylinder, gauge, self-inflating mask, equipment for bladder catheterization, reflex hammer (or similar device), high-level disinfected or sterile surgical gloves
### SCENARIO 1
(Information provided and questions asked by the trainer)

1. Mrs. G. is 16 years old and is 37 weeks pregnant. This is her first pregnancy. She has presented to the labor unit with contractions and says that she has had a bad headache all day. She also says that she cannot see properly. While she is getting up from the examination table, she falls back onto the pillow and begins to have a convulsion. What will you do?

   **Shouts** for help to urgently mobilize all available personnel. Checks airway to ensure that it is open, and turns Mrs. G. onto her left side. Protects her from injuries (fall) but does not attempt to restrain her. Has one of the staff members who responded to her/his shout for help take Mrs. G.’s vital signs (temperature, pulse, blood pressure and respiration rate) and check her level of consciousness, color and skin temperature. Has another staff member start oxygen at 4–6 L/minute. Prepares and gives magnesium sulfate 20% solution, 4 g IV over 5 minutes. Follows promptly with 10 g of 50% magnesium sulfate solution, 5 g in each buttock deep IM injection with 1 mL of 2% lignocaine in the same syringe. At the same time, explains to the family what is happening and talks to the woman as appropriate.

**Discussion Question 1**: What would you do if there was no magnesium sulfate in the hospital?

**Expected Response**: Use diazepam 10 mg slowly IV over 2 minutes.

2. After 5 minutes, Mrs. G. is no longer convulsing. Her diastolic blood pressure is 110 mm Hg and her respiration rate is 20 breaths/minute. What is Mrs. G.’s problem? What will you do next? What should the aim be with respect to controlling Mrs. G.’s blood pressure? What other care does Mrs. G. require now?

   States that Mrs. G.’s symptoms and signs are consistent with eclampsia. Gives hydralazine 5 mg IV slowly every 5 minutes until diastolic blood pressure is lowered to between 90–100 mm Hg. States that the aim should be to keep Mrs. G.’s diastolic blood pressure between 90 mm Hg and 100 mm Hg to prevent cerebral hemorrhage. Has one of the staff assist with the emergency insertion of an indwelling catheter to monitor urinary output and proteinuria. Has a second staff member start an IV infusion of normal saline or Ringer’s lactate and draws blood to assess clotting status using a bedside clotting test. Maintains a strict fluid balance chart.

**Discussion Question 2**: Would you give additional hydralazine after the first dose?

**Expected Response**: Repeat hourly as needed, or give 12.5 mg IM every 2 hours as needed.

3. After another 15 minutes, Mrs. G.’s blood pressure is 94 mm Hg and her respiration rate is 16 breaths/minute. What will you do now?

   Stays with Mrs. G. continuously and monitors pulse, blood pressure, respiration rate, patella reflexes and fetal heart. Checks whether Mrs. G. has had any further contractions.

---

*Best Practices in Maternal and Newborn Care Learning Resource Package*
## SCENARIO 1 (continuation)

<table>
<thead>
<tr>
<th>Key Reactions/Responses</th>
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<tbody>
<tr>
<td>4. It is now 1 hour since treatment was started for Mrs. G. She is sleeping but is easily roused. Her blood pressure is now 90 mm Hg and her respiration rate is still 16 breaths/minute. She has had several more contractions, each lasting less than 20 seconds. What will you do now?</td>
<td></td>
</tr>
<tr>
<td>Continues to monitor pulse, blood pressure, respiration rate, patella reflexes and fetal heart Monitors urine output and IV fluid intake Monitors for the development of pulmonary edema by auscultating lung bases for rales Assesses Mrs. G.’s cervix to determine whether it is favorable or unfavorable</td>
<td></td>
</tr>
<tr>
<td>5. It is now 2 hours since treatment was started for Mrs. G. Her blood pressure is still 90 mm Hg and her respiration rate is still 16 breaths/minute. All other observations are within expected range. She continues to sleep and rouses when she has a contraction. Contractions are occurring more frequently but still last less than 20 seconds. Mrs. G.’s cervix is 100% effaced and 3 cm dilated. There are no fetal heart abnormalities. What will you do now? When should childbirth occur?</td>
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<tr>
<td>Continues to monitor Mrs. G. as indicated above States that membranes should be ruptured using an amniotic hook or a Kocher clamp and labor induced using oxytocin or prostaglandins States that childbirth should occur within 12 hours of the onset of Mrs. G.’s convulsions</td>
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## SCENARIO 2

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<thead>
<tr>
<th>Key Reactions/Responses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mrs. H. is 20 years old. She is 38 weeks pregnant. This is her second pregnancy. Her mother-in-law has brought Mrs. H. to the health center this morning because she has had a severe headache and blurred vision for the past 6 hours. Mrs. H. says she feels very ill. What will you do?</td>
<td></td>
</tr>
<tr>
<td>Shouts for help to urgently mobilize all available personnel Places Mrs. H. on the examination table on her left side Makes a rapid evaluation of Mrs. H.’s general condition, including vital signs (temperature, pulse, blood pressure, and respiration rate), level of consciousness, color and skin temperature Simultaneously asks about the history of Mrs. H.’s present illness</td>
<td></td>
</tr>
<tr>
<td>2. Mrs. H.’s pulse is 100 beats/minute, diastolic blood pressure is 96 mm Hg and respiration rate 20 breaths/minute. She has hyper-reflexia. Her mother-in-law tells you that Mrs. H. has had no symptoms or signs of the onset of labor. What is Mrs. H.’s problem? What will you do now? What is your main concern at the moment?</td>
<td></td>
</tr>
<tr>
<td>States that Mrs. H.’s symptoms and signs are consistent with severe pre-eclampsia Has one of the staff members who responded to her/his shout for help start oxygen at 4–6 L/minute Prepares and gives magnesium sulfate 20% solution, 4 g IV over 5 minutes Follows promptly with 10 g of 50% magnesium sulfate solution, 5 g in each buttock deep IM injection with 1 mL of 2% lignocaine in the same syringe At the same time, tells Mrs. H. (and her mother-in-law) what is going to be done, listens to her and responds attentively to her questions and concerns States that the main concern at the moment is to prevent Mrs. H. from convulsing</td>
<td></td>
</tr>
<tr>
<td>SCENARIO 2 (continuation)</td>
<td>KEY REACTIONS/RESPONSES (continuation)</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>3. After 15 minutes, Mrs. H. is resting quietly. She still has a headache and hyper-reflexia. What will you do now? What will you do during the next hour?</td>
<td>Has one of the staff assist with the emergency insertion of an indwelling catheter to monitor urinary output and proteinuria Starts an IV infusion of normal saline or Ringer’s lactate Listens to the fetal heart States that during the next hour will continue to monitor vital signs, reflexes and fetal heart, and maintain a strict fluid balance chart</td>
</tr>
<tr>
<td>4. It is now 1 hour since treatment for Mrs. H. was started. Her pulse is still 100 beats/minute, diastolic blood pressure 96 mm Hg and respiration rate 20 breaths/minute. She still has hyper-reflexia. You detect that the fetal heart rate is 80. What is your main concern now? What will you do now?</td>
<td>States that main concern now is fetal heart abnormality States that Mrs. H. should be prepared to go to the operating room for cesarean section Tells Mrs. H. (and her mother-in-law) what is happening, listens to her concerns and provides reassurance</td>
</tr>
</tbody>
</table>
KNOWLEDGE ASSESSMENT: MANAGEMENT OF HEADACHE, BLURRED VISION, CONVULSIONS, LOSS OF CONSCIOUSNESS OR HIGH BLOOD PRESSURE

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Conditions necessary for a woman to be considered to have pre-eclampsia are:
   a. She is more than 20 weeks pregnant
   b. Her diastolic blood pressure is more than 90 mm Hg
   c. She has proteinuria
   d. All of the above

2. Signs and symptoms of severe pre-eclampsia may include:
   a. Epigastric tenderness, headache, and/or visual changes
   b. Hyper-reflexia
   c. Pulmonary edema and/or oliguria
   d. a) and b)
   e. All of the above

3. What is the drug of choice for managing a convulsion in a pregnant woman?
   a. Diazepam (Valium)
   b. Hydralazine
   c. Magnesium sulfate

4. Eclampsia may occur:
   a. During pregnancy
   b. During labor and birth
   c. During the postpartum period
   d. a) and b)
   e. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

5. Eclampsia can be predicted from the mean arterial blood pressure or diastolic blood pressure during the second trimester.  

6. Eclampsia is abrupt in onset, without warning signs in about 20% of women.
Session Objectives

- Discuss best practices for diagnosing and managing hypertension, pre-eclampsia and eclampsia
- Describe strategies for controlling hypertension
- Describe strategies for preventing and treating convulsions in eclampsia

Problem

Pregnant or recently postpartum woman who:

- Has elevated blood pressure
- Complains of headache or blurred vision
- Is found unconscious or convulsing

What’s her problem?

What do you think may be wrong?
What is her problem?

It may be severe pre-eclampsia or eclampsia.

High Blood Pressure

- Classifications:
  - Chronic hypertension
  - Pregnancy-induced hypertension:
    - Pregnancy-induced hypertension without proteinuria
    - Mild pre-eclampsia
    - Severe pre-eclampsia
    - Eclampsia

Questions ??

- What is pre-eclampsia?
- When can it occur?

Pre-Eclampsia

- Woman over 20 weeks gestation with:
  - Diastolic blood pressure > 90 mm Hg AND
  - Proteinuria
- Predisposes woman to develop eclampsia
Mild Pre-Eclampsia

- Two readings of diastolic blood pressure 90-110 mm Hg 4 hours apart after 20 weeks gestation
- Proteinuria up to 2+
- No other signs/symptoms of severe pre-eclampsia

Severe Pre-Eclampsia

- Diastolic blood pressure > 110 mm Hg
- Proteinuria > 3+

Other signs and symptoms sometimes present:
- Epigastric tenderness
- Headache
- Visual changes
- Hyperreflexia
- Pulmonary edema
- Oliguria

Predicting Pre-eclampsia: What do the studies* tell us?

- Those women who developed gestational hypertension at an earlier gestational age were more likely to progress to pre-eclampsia
- Approximately 15–25% of women initially diagnosed with gestational hypertension will develop pre-eclampsia
- It is difficult to predict who will develop pre-eclampsia

Questions ??

- What is “eclampsia”?
- When can it occur?

*Sources: Saudan et al. 1998; Moutquin et al. 1985.
### Eclampsia: Typical Signs

- Convulsions occurring after 20 weeks gestation in a woman without a previously known seizure disorder. (Can also occur in first few days postpartum.)
- Proteinuria 2+ or more
- Blood pressure 90 mm Hg or more:
  - A small proportion of women with eclampsia have normal blood pressure

### Strategies for Preventing Eclampsia

- Antenatal care and recognition of hypertension
- Identification and treatment of pre-eclampsia by skilled attendant
- Timely delivery
- 3.4% of women with severe pre-eclampsia will have a convulsion
- Eclampsia is the number one cause of in-hospital maternal death in Nepal

### More Study Results

Another study by Chesley and Sibai in 1987 concluded:

- Cannot use 2nd trimester mean arterial pressure or diastolic pressure to predict eclampsia
- Eclampsia is abrupt in onset, without warning signs in about 20% of women

Source: Chesley and Sibai 1987.

### Question ??

What should be your initial response when you find a woman in late pregnancy who is convulsing?
**Initial Assessment and Management of Eclampsia**

- Shout for help – mobilize personnel
- Rapidly evaluate breathing and state of consciousness
- Check airway, blood pressure and pulse
- Position on left side
- Protect from injury but do not restrain
- Start IV infusion with large-bore needle (16-gauge)
- Give oxygen at 4 L/minute

**Antihypertensive Drugs**

**Drugs:**
- Hydralazine
- Labetolol
- Nifedipine

**Principles:**
- Initiate antihypertensives if diastolic blood pressure > 110 mm Hg
- Maintain diastolic blood pressure 90–100 mm Hg to prevent cerebral hemorrhage

**EMERGENCY!!!**

**Question:**
- What do you do if a woman is suddenly convulsing?

**Management during a Convulsion**

- Give magnesium sulfate IM
- Gather emergency equipment (O2, mask, etc.)
- Position on left side
- Protect from injury but do not restrain

**DO NOT LEAVE THE WOMAN UNATTENDED**
Anticonvulsive Drugs

- Magnesium sulfate
- Diazepam
- Phenytoin

Post-Convulsion Management

- Prevent further convulsions
- Control blood pressure
- Prepare for delivery (if undelivered)

Studies to Be Reviewed

For severe pre-eclampsia:
- Magnesium sulfate vs. placebo

For eclampsia:
- Magnesium sulfate vs. diazepam
- Magnesium sulfate and outcome of labor

Magnesium Sulfate

- Use magnesium sulfate in:
  - Women with eclampsia
  - Women with severe pre-eclampsia necessitating delivery
- Start magnesium sulfate when decision for delivery is made
- Continue therapy until 24 hours after delivery or the last convulsion, whichever occurs last
**Monitoring Hourly**

<table>
<thead>
<tr>
<th>Assess</th>
<th>Normal Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of consciousness</td>
<td>Sleepy but arousable</td>
</tr>
<tr>
<td>Diastolic blood pressure</td>
<td>Should be maintained between 80–100 mmHg</td>
</tr>
<tr>
<td>Respiratory rate</td>
<td>16 breaths/minute or more</td>
</tr>
<tr>
<td>Deep tendon reflexes</td>
<td>Minimal but present</td>
</tr>
<tr>
<td>Fetal heart sounds (if undelivered)</td>
<td>Decrease in variability</td>
</tr>
</tbody>
</table>

**Monitoring Hourly (cont.)**

<table>
<thead>
<tr>
<th>Assess</th>
<th>Abnormal Findings</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lungs</td>
<td>Pulmonary edema</td>
<td>Discontinue magnesium sulfate</td>
</tr>
<tr>
<td>Urine output</td>
<td>Falls below 30 mL/hour or 120 mL/4 hours</td>
<td>Discontinue magnesium sulfate</td>
</tr>
<tr>
<td>Uterus (after delivery)</td>
<td>Atonic uterus</td>
<td>Consider oxytocin for 24 hours after delivery</td>
</tr>
<tr>
<td></td>
<td>(postpartum bleeding)</td>
<td></td>
</tr>
</tbody>
</table>

**Principles of Management**

- Timing and route of delivery: condition of mother vs. maturity of fetus
- Assessment of fetus: evidence of fetal compromise
- Control of convulsions
- Control of hypertension
- Referral due to other organ complications: pulmonary, renal, central nervous system

**Summary**

- There are many manifestations of increased blood pressure in pregnancy
- It is not possible to predict which patients are at risk for severe pre-eclampsia or eclampsia
- Vigilant care is needed to make the diagnosis
- Once the diagnosis is made, appropriate treatment can reduce morbidity and mortality
- Anticonvulsants should be used, with magnesium sulfate being the first line
- Antihypertensives should be employed as needed
- Close monitoring is needed for side effects
**References**


**References (cont.)**


Objective: To evaluate the effectiveness of magnesium sulfate vs. placebo
Design: Double-blinded prospective RCT
Tertiary referral obstetrics unit in South Africa
822 women with severe pre-eclampsia necessitating delivery randomly assigned to placebo or magnesium sulfate
Data from 699 women evaluated

In women with severe pre-eclampsia, eclampsia occurred 11 times less often in women receiving magnesium sulfate than in women receiving placebo

<table>
<thead>
<tr>
<th>Convulsions</th>
<th>No Convulsions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium sulfate</td>
<td>1 (0.3%)</td>
</tr>
<tr>
<td>No magnesium sulfate</td>
<td>11 (3.2%)*</td>
</tr>
</tbody>
</table>

* RR 0.09, 95% CI (0.01–0.69)
Magnesium Sulfate vs. Diazepam for Eclampsia: Study Objective and Design

- **Objective**: To assess effects of magnesium sulfate compared with diazepam when used for the care of women with eclampsia
- **Design**: Randomized controlled trial

Source: Duley and Henderson-Smart 2000a.

Magnesium Sulfate vs. Diazepam: Recurrence of Convulsions

<table>
<thead>
<tr>
<th>Convulsions</th>
<th>No Convulsions</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium sulfate</td>
<td>71</td>
<td>547</td>
</tr>
<tr>
<td>Diazepam</td>
<td>160</td>
<td>458</td>
</tr>
</tbody>
</table>

RR 0.45, 95% CI 0.35-0.58

No differences in maternal morbidity and borderline decrease in maternal mortality

Source: Duley and Henderson-Smart 2000a.

Magnesium Sulfate and Effect on Labor: Objective and Design

- **Objective**: Evaluate effect of magnesium sulfate on labor
- **Design**: Study period: March 1995 to June 1996; randomized term mildly pre-eclamptic women to receive magnesium sulfate 6 g bolus then 2 g/hour or saline
- Cervical ripening agents/oxytocin at physician’s discretion
- Women taken off protocol if developed severe pre-eclampsia


Magnesium Sulfate and Effect on Labor: Results

- **Outcome**: Length of labor, duration of latent and active phases, first and second stages
- **Results**:
  - No difference in duration of oxytocin: magnesium sulfate group 14.1 hours vs. 13.5 hours
  - Slightly higher dose of oxytocin required in magnesium sulfate group: 13.9 mL/min vs. 11.0 (p=0.036)
  - No significant postpartum hemorrhage or side effects

Magnesium Sulfate and Effect on Labor: Conclusion

Slightly higher doses of oxytocin required in magnesium treated groups, but no difference in labor and no adverse effects


Case Study

- Divide participants into groups of 4 or 5
- Each group should read Case Study: Pregnancy-Induced Hypertension and answer the questions
- Reassemble the larger group and discuss case study and questions
# Session Plan

## Maternal and Newborn Care: Technical Update

### Session Topic

**Best Practices in Management of Fever after Childbirth**

**Time:** 75 min

### Session Objectives

*By the end of this session, participants will be able to:*

- Discuss the prevalence of postpartum infection
- Describe risk factors for and diagnosis of postpartum infection
- Discuss strategies for preventing postpartum infection
- Describe clinical treatment approaches
- Discuss programmatic approaches for prevention and treatment

### Methods and Activities

#### Illustrated presentation/discussion: Best practices in managing fever after childbirth (30 min)

- Use questioning of group to draw out knowledge and experience of participants (suggested questions provided in PowerPoint presentation).
- Discuss issues that arise during presentation and questioning.
- Be sure to include the following topical areas:
  - Prevalence and significance of fever after childbirth
  - Natural barriers to infection
  - Risk factors for postpartum infection
  - Causes of postpartum infection
  - Prevention strategies
  - Investigation of Vitamin A and postpartum infection
  - Prophylactic antibiotics for C/S surgery
  - Managing metritis

#### Case studies (instructions in PowerPoint) (45 min)

- Divide participants into groups to work on the three case studies.
- Reassemble group to discuss answers to case study.

### Materials/Resources

- Boxlight projector
- PowerPoint presentation
- Overhead projector with transparencies (Handouts of presentations if no electricity)
- Case Study 1: Fever after Childbirth
- Case Study 2: Fever after Childbirth
- Case Study 3: Fever after Childbirth
- Paper and pens for recording answers to case studies
CASE STUDY 20.1: FEVER AFTER CHILDBIRTH

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

CASE STUDY

Mrs. B. is 22 years old. She gave birth to a full-term newborn 3 days ago at the health center. The newborn weighed 4 kg and Mrs. B. suffered a perineal laceration that required suturing. She was counseled about danger signs before leaving the health center, including the need to seek care early if any danger signs occur. Mrs. B. has come back today complaining that her perineal wound has become increasingly tender during the past 12 hours. She also says that she feels hot and unwell.

ASSESSMENT
(History, physical examination, screening procedures/laboratory tests)

1. What will you include in your assessment of Mrs. B., and why?

2. What particular aspects of Mrs. B.’s physical examination will help you make a diagnosis or identify her problems/needs, and why?

3. What screening procedures/laboratory tests will you include (if available) in your assessment of Mrs. B., and why?

DIAGNOSIS
(Identification of problems/needs)

You have completed your assessment of Mrs. B. and your main findings include the following:

- Mrs. B.’s temperature is 38º C, her pulse rate is 90 beats/minute, her blood pressure is 120/80 mm Hg and her respiration rate is 20 breaths/minute.
- Her perineal wound is tender, with pus draining from the center. The wound is not edematous but there is slight erythema present extending beyond the edge of the incision.
- She has no abdominal pain or tenderness. Her lochia is red, normal in amount, and does not have an offensive odor.
4. Based on these findings, what is Mrs. B.’s diagnosis, and why?

CARE PROVISION
(Planning and intervention)

5. Based on your diagnosis, what is your plan of care for Mrs. B., and why?

EVALUATION

Mrs. B. returns to the health center the next day. Her temperature is 37.6º C. Her perineal wound is slightly less tender and there is less discharge.

6. Based on these findings, what is your continuing plan of care for Mrs. B., and why?
CASE STUDY 20.2: FEVER AFTER CHILDBIRTH

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

CASE STUDY

Mrs. D. is 17 years old. She gave birth to her first newborn 3 weeks ago at the health center. Her birth was uncomplicated and the newborn was healthy and of normal birth weight. You last saw Mrs. D. 2 days after the birth, when she and her newborn were found to be doing well. She has come to the health center today because she has breast pain and tenderness and feels unwell.

ASSESSMENT
(History, physical examination, screening procedures/laboratory tests)

1. What will you include in your initial assessment of Mrs. D., and why?

2. What particular aspects of Mrs. D.’s physical examination will help you make a diagnosis or identify her problems/needs, and why?

3. What screening procedures/laboratory tests will you include (if available) in your assessment of Mrs. D., and why?

DIAGNOSIS
(Identification of problems/needs)

You have completed your assessment of Mrs. D. and your main findings include the following:

- Her temperature is 38º C, her pulse rate is 120 beats/minute, her blood pressure is 120/80 mm Hg and her respiration rate is 20 breaths/minute.
- She has pain and tenderness in her left breast, and there is a wedge-shaped area of redness in one segment of the breast.
- Mrs. D. reports that for the first week or so after birth, her newborn seemed to have difficulty taking the nipple into his mouth, but more recently she thinks that he has been doing better. He feeds about six times in a 24-hour period and is given water between feedings. Mrs. D. had breastfed the newborn less than an hour before you examined her.
4. Based on these findings, what is Mrs. D.’s diagnosis, and why?

CARE PROVISION (Planning and intervention)

5. Based on your diagnosis, what is your plan of care for Mrs. D., and why?

EVALUATION

Three days later Mrs. D. reports that she is feeling better and has stopped taking her medication. Her temperature is 37.6º C, her pulse is 90 beats/minute, her blood pressure is 120/80 mm Hg and her respiration rate is 20 breaths/minute. There is less pain and swelling in her breast. She reports that she has stopped giving her newborn water and he has been feeding more than six times in 24 hours. She also reports that the newborn seems to be attaching better to the breast.

6. Based on these findings, what is your continuing plan of care for Mrs. D., and why?
CASE STUDY 20.3: FEVER AFTER CHILDBIRTH

DIRECTIONS

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

CASE STUDY

Mrs. C. is a 35-year-old para three. She gave birth at home 48 hours ago. Her pregnancy was term and her birth attendant was the local traditional birth attendant (TBA). Labor lasted 2 days and the TBA inserted herbs into Mrs. C.’s vagina to help speed up the childbirth. The newborn breathed spontaneously and appears healthy. Mrs. C.’s husband has brought her to the health center today because she has had fever and chills for the past 24 hours.

ASSESSMENT (History, physical examination, screening procedures/laboratory tests)

1. What will you include in your initial assessment of Mrs. C., and why?

2. What particular aspects of Mrs. C.’s physical examination will help you make a diagnosis or identify her problems/needs, and why?

3. What screening procedures/laboratory tests will you include (if available) in your assessment of Mrs. C., and why?

DIAGNOSIS (Identification of problems/needs)

- You have completed your assessment of Mrs. C. and your main findings include the following:
  - Mrs. C.’s temperature is 39.8º C, her pulse rate is 136 beats/minute, her blood pressure is 100/70 mm Hg and her respiration rate is 24 breaths/minute.
  - She is pale and lethargic and slightly confused.
  - She has lower abdominal pain, her uterus is soft and tender, and she has foul-smelling vaginal discharge.
  - It is not known whether the placenta was complete.
  - Mrs. C. is fully immunized against tetanus.

4. Based on these findings, what is Mrs. C.’s diagnosis, and why?

CARE PROVISION (Planning and intervention)

5. Based on your diagnosis, what is your plan of care for Mrs. C., and why?
EVALUATION

Thirty-six hours after initiation of treatment, you find the following:

Mrs. C.’s temperature is 38º C, her pulse rate is 96 beats/minute, her blood pressure is 110/70 mm Hg and her respiration rate is 20 breaths/minute. She is less pale and no longer confused.

6. Based on these findings, what is your continuing plan of care for Mrs. C., and why?
KNOWLEDGE ASSESSMENT: MANAGEMENT OF FEVER AFTER CHILDBIRTH

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Globally, what percentage of women develop infections after childbirth:
   a. < 5%
   b. 5–20%
   c. 25–35%
   d. > 35%

2. Factors that may predispose to postpartum infection:
   a. Prolonged labor and prolonged rupture of membranes
   b. Frequent vaginal exams during labor
   c. Cesarean section
   d. a) and b)
   e. All of the above

3. Postpartum metritis may lead to the following morbidity:
   a. Chronic pelvic pain
   b. Dysmenorrhea, menorrhagia
   c. Infertility
   d. a) and b)
   e. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

4. Continued oral antibiotics after clinical improvement is not necessary in cases of uncomplicated endometritis. _____

5. The risk of postpartum infection is decreased by reducing the number of vaginal exams, the length of labor and the length of time membranes are ruptured. _____
Objectives

By the end of the session, the learner will be able to:

- Discuss the prevalence of postpartum infection
- Describe risk factors for and diagnosis of postpartum infection
- Discuss strategies for preventing postpartum infection
- Describe clinical treatment approaches
- Describe programmatic approaches for prevention and treatment

Question ??

Please consider during this presentation:

Would you consider the use of the partograph an important intervention for reducing postpartum infection?

Prevalence of Postpartum Infections

<table>
<thead>
<tr>
<th>Country</th>
<th>Author</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nepal</td>
<td>NSMP (2002)</td>
<td>11%</td>
</tr>
<tr>
<td>Zaria, Nigeria</td>
<td>Harrison (1985)</td>
<td>7.9%</td>
</tr>
<tr>
<td>Zaria, NG (Home births)</td>
<td>Harrison (1985)</td>
<td>14.9%</td>
</tr>
<tr>
<td>Kenya</td>
<td>Plummer (1994)</td>
<td>20%</td>
</tr>
<tr>
<td>Indonesia (Home births)</td>
<td>Gulardi (2003)</td>
<td>14%</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>Ngoc (2005)</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

5–20% of women develop a PP infection
**Question ??**

What are some natural barriers to maternal infection?

**Natural Barriers to Maternal Infection**

- Amniotic fluid is a wonderful culture medium!
- Placental membranes form a barrier at the uterine level
- Mucus plug (progesterone-induced) at the cervical level
- Lochia (postpartum discharge) is a natural effluent which keeps pathogens flowing outward
- Increased pelvic blood flow at the systemic level

**Risk Factors for Postpartum Infections**

- Frequent vaginal examinations
- Prolonged and obstructed labor – Length of Labor
- Prolabor rupture of membranes – Length of ROM
- Cesarean section (OR at least 2.0)
- Preterm birth
- Episiotomies, vacuum extractions, forceps delivery, uterine revision (any procedure)
- Poor maternal hygiene
- Maternal anemia
- Micronutrient deficiencies
- Sexually transmitted infections
Question ??

What are some causes of fever after childbirth?

Fever after Childbirth: Differential Diagnosis

- Pelvic abscess
- Peritonitis
- Breast engorgement
- Mastitis
- Breast abscess
- Wound morbidity:
  - Wound abscess
  - Wound seroma
  - Wound hematoma
  - Wound cellulitis
- Cystitis
- Acute pyelonephritis
- Deep vein thrombosis
- Pneumonia
- Atelectasis
- Uncomplicated malaria
- Severe/complicated malaria
- Typhoid
- Hepatitis

Postpartum Infections and Subsequent Maternal Morbidity

- Pelvic inflammatory disease
- Chronic pelvic pain
- Dysmenorrhea, menorrhagia
- Infertility

Prevention Strategies at the Time of Childbirth

- Reduce the length of labor:
  - Partograph
  - Ambulation
  - Labor support
  - Appropriate controlled augmentation of labor
- Reduce the time of rupture of membranes:
  - Delay artificial rupture of membranes
  - Shorten labor
- Reduce the number of vaginal exams:
  - Partograph helps to schedule VE, limit “duty check”
Prevention Strategies at the Time of Childbirth (cont.)

- Infection prevention practices for every delivery:
  - Handwashing
  - Minimum manipulation
  - High-level disinfected or sterile gloves for examination
  - Avoid unnecessary procedures (e.g., episiotomy)
  - Nothing unclean inside vagina (e.g., traditional practices of inserting twigs, leaves, etc.)

Prevention Strategies in Pregnancy and Labor

- Other possible strategies:
  - Vitamin A supplementation
  - Prophylactic antibiotics (for C-sections)

Vitamin A and Postpartum Infections and Mortality

- Low dose Vitamin A given during 2nd and 3rd trimester substantially reduces risk of postpartum infections in populations of Vitamin A deficient women (Dibley, Indonesia 1999)
- Overall, the current evidence is not conclusive enough to warrant Vitamin A supplementation in pregnancy (Kolsteren 2001)
- In populations with Vitamin A deficiency, programs to increase Vitamin A or Beta carotene must be initiated (Villar 2003)

Providing Prophylactic Antibiotics for Cesarean Section: Cochrane Review

- Objective: To determine which antibiotic regimen is most effective in reducing infectious morbidity in women undergoing cesarean section
- Methods: 51 randomized controlled trials
- Outcomes: Fever, wound infection, urinary tract infection, other serious infections, adverse reactions, cost, newborn outcomes

Providing Prophylactic Antibiotics for Cesarean Section: Cochrane Review (cont.)

Results:
- Ampicillin and 1st generation cephalosporin have similar efficacy in reducing postoperative endometritis:
  - No need for more broad spectrum agents
  - Single dose is same as multiple doses
  - Need randomized controlled trial to test optimal timing (pre-operative vs. at cord clamp)

Managing Metritis: Cochrane Review

- Objective: To assess the effects of different regimens and their complications in the treatment of endometritis
- Methods: 41 randomized controlled trials
- Outcomes: duration of fever, treatment failure, other complication (infectious), drug reaction, costs

Managing Metritis: Cochrane Review (cont.)

- Combination antibiotics are necessary for metritis
- Should include a penicillin (ampicillin), an aminoglycoside (gentamicin) and clindamycin/metronidazole
- Single daily dosing of gentamicin is effective
- Continued oral antibiotics after clinical improvement is not necessary in cases of uncomplicated endometritis

Case Studies

- Divide participants into groups of 4 or 5
- Give one-third of groups Case Study 1: Fever, one-third of groups Case Study 2: Fever, and the remaining groups Case Study 3: Fever
- Groups will read their case study and answer the questions
- Finally, the group will be reassembled to discuss Case Studies
Antibiotics for Metritis

- IV antibiotics:
  - Ampicillin every 6 hours
  - Gentamicin every 24 hours
  - Metronidazole every 8 hours
- Continue until fever-free for 48 hours
- No oral antibiotics after treatment:
  - Not proven to add any benefit
  - Only add to expense

Postpartum Infections: Summary

- Postpartum infection/sepsis remains an important cause of maternal morbidity and mortality
- Three biggest risk factors are:
  - Prolonged labor, prolonged ROM and multiple exams (Ahhh, the partograph!)
- Most common diagnosis of postpartum fever is:
  - Metritis
- Antibiotics: Less is more!

References

Best Practices in Management of Fever after Childbirth

By the end of the session, the learner will be able to:

- Discuss the prevalence of postpartum infection
- Describe risk factors for and diagnosis of postpartum infection
- Discuss strategies for preventing postpartum infection
- Describe clinical treatment approaches
- Describe programmatic approaches for prevention and treatment

Prevalence of Postpartum Infections

<table>
<thead>
<tr>
<th>Country</th>
<th>Author</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nepal</td>
<td>NSMP (2002)</td>
<td>11%</td>
</tr>
<tr>
<td>Zaria, Nigeria</td>
<td>Harrison (1985)</td>
<td>7.9%</td>
</tr>
<tr>
<td>Zaria, NG (Home births)</td>
<td>Harrison (1985)</td>
<td>14.9%</td>
</tr>
<tr>
<td>Kenya</td>
<td>Plummer (1994)</td>
<td>20%</td>
</tr>
<tr>
<td>Indonesia (Home births)</td>
<td>Gulardi (2003)</td>
<td>14%</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>Ngoc (2005)</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

5–20% of women develop a PP infection

Asia-Specific Distribution

- Unclassified: 6%
- Haemorrhage: 9%
- Hypertensive: 8%
- Sepsis: 7%
- Other Direct: 6%
- Other Indirect: 6%
- Embolism: 0%
- Ectopic Preg: 2%
- Anaemia: 13%
- Abortion: 6%
- Obstructed Labor: 9%

Question ??

What are some natural barriers to maternal infection?

Natural Barriers to Maternal Infection

- Amniotic fluid is a wonderful culture medium!
- Placental membranes form a barrier at the uterine level
- Mucus plug (progesterone-induced) at the cervical level
- Lochia (postpartum discharge) is a natural effluent which keeps pathogens flowing outward
- Increased pelvic blood flow at the systemic level

Risk Factors for Postpartum Infections

- Frequent vaginal examinations
- Prolonged and obstructed labor – Length of Labor
- Pre-labor rupture of membranes – Length of ROM
- Cesarean section (OR at least 2.0)
- Preterm birth
- Episiotomies, vacuum extractions, forceps delivery, uterine revision (any procedure)
- Poor maternal hygiene
- Maternal anemia
- Micronutrient deficiencies
- Sexually transmitted infections
Question ??

What are some causes of fever after childbirth?

Fever after Childbirth: Differential Diagnosis

Pelvic abscess
Peritonitis
Breast engorgement
Mastitis
Breast abscess
Wound morbidity:
Wound abscess
Wound seroma
Wound hematoma
Wound cellulitis

Pelvic inflammatory disease
Cystitis
Acute pyelonephritis
Deep vein thrombosis
Pneumonia
Atelectasis
Uncomplicated malaria
Severe/complicated malaria
Typhoid
Hepatitis

Metritis, Metritis, Metritis

Postpartum Infections and Subsequent Maternal Morbidity

Pelvic inflammatory disease
Chronic pelvic pain
Dysmenorrhea, menorrhagia
Infertility

When you hear hoof beats...

Prevention Strategies at the Time of Childbirth

Reduce the length of labor:
Partograph
Ambulation
Labor support
Appropriate controlled augmentation of labor

Reduce the time of rupture of membranes:
Delay artificial rupture of membranes
Shorten labor

Reduce the number of vaginal exams:
Partograph helps to schedule VE, limit “duty check”
Prevention Strategies at the Time of Childbirth (cont.)

- Infection prevention practices for every delivery:
  - Handwashing
  - Minimum manipulation
  - High-level disinfected or sterile gloves for examination
  - Avoid unnecessary procedures (e.g., episiotomy)
  - Nothing unclean inside vagina (e.g., traditional practices of inserting twigs, leaves, etc.)

Prevention Strategies in Pregnancy and Labor

- Other possible strategies:
  - Vitamin A supplementation
  - Prophylactic antibiotics (for C-sections)

Vitamin A and Postpartum Infections and Mortality

- Low dose Vitamin A given during 2nd and 3rd trimester substantially reduces risk of postpartum infections in populations of Vitamin A deficient women (Dibley, Indonesia 1999)
- Overall, the current evidence is not conclusive enough to warrant Vitamin A supplementation in pregnancy (Kolsteren 2001)
- In populations with Vitamin A deficiency, programs to increase Vitamin A or Beta carotene must be initiated (Villar 2003)

Providing Prophylactic Antibiotics for Cesarean Section: Cochrane Review

- Objective: To determine which antibiotic regimen is most effective in reducing infectious morbidity in women undergoing cesarean section
- Methods: 51 randomized controlled trials
- Outcomes: Fever, wound infection, urinary tract infection, other serious infections, adverse reactions, cost, newborn outcomes

Providing Prophylactic Antibiotics for Cesarean Section: Cochrane Review (cont.)

Results:
- Ampicillin and 1st generation cephalosporin have similar efficacy in reducing postoperative endometritis:
  - No need for more broad spectrum agents
  - Single dose is same as multiple doses
  - Need randomized controlled trial to test optimal timing (pre-operative vs. at cord clamp)

Managing Metritis: Cochrane Review

- Objective: To assess the effects of different regimens and their complications in the treatment of endometritis
- Methods: 41 randomized controlled trials
- Outcomes: duration of fever, treatment failure, other complication (infectious), drug reaction, costs

Managing Metritis: Cochrane Review (cont.)

Results:
- Combination antibiotics are necessary for metritis
- Should include a penicillin (ampicillin), an aminoglycoside (gentamicin) and clindamycin/metronidazole
- Single daily dosing of gentamicin is effective
- Continued oral antibiotics after clinical improvement is not necessary in cases of uncomplicated endometritis

Case Studies

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- **Postpartum infection/sepsis remains an important cause of maternal morbidity and mortality**
- **Three biggest risk factors are:**
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- **Most common diagnosis of postpartum fever is:**
  - Metritis
- **Antibiotics: Less is more!**

**References**


## MODULE 21: BEST PRACTICES IN CARE OF THE NEWBORN WITH PROBLEMS—SESSION PLAN

### MATERNAL AND NEWBORN CARE TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Practices in Care of the Newborn with Problems</td>
<td>120 min</td>
</tr>
</tbody>
</table>

### SESSION OBJECTIVES

By the end of this session, participants will be able to:

- Discuss the recognition and management of the newborn needing resuscitation
- Discuss the recognition and management of the low birth weight newborn
- Describe the key elements of Kangaroo Care
- Discuss the recognition and management of sepsis in the newborn

### Methods and Activities | Materials/Resources

| Illustrated presentation/discussion: Care of the newborn with problems (30 min) |
| Use questions and discussion throughout presentation as indicated on slides. |
| Respond to questions as they arise during presentation. |
| Be sure to include the following topical areas: |
| - Birth preparation |
| - Signs of health at birth |
| - Immediate care of the newborn |
| - Factors associated with asphyxia |
| - Determining which baby needs resuscitation |
| - Equipment for resuscitation |
| - What is not needed for resuscitation |
| - Steps in resuscitation |
| - Harmful and ineffective practices |
| - Infection prevention for resuscitation |
| - Documentation |
| - Post-resuscitation tasks |
| - Warmth of the newborn |
| - LBW newborn |
| - Premature newborn |
| - Kangaroo care: |
|  - Eligibility |
|  - How to use |
|  - Effectiveness |
|  - Benefits |

| Case study: Newborn with problems (30 min) |
| Small group work as described on case study |
| General discussion to summarize |

| Clinical simulation: Demonstration and practice (60 min) |
| Demonstrate Neonatal Resuscitation, explaining each step as learners follow with Learning Guide: Newborn Resuscitation |
| Learners practice with models in groups |

**NOTE:** A separate 2-hour session on Kangaroo Mother Care exists. If this session is not used, this Newborn with Problems section may be extended.
CASE STUDY: NEWBORN WITH PROBLEMS

CASE STUDY

Newborn B. is born after a prolonged second stage of labor. The newborn is limp and does not breathe spontaneously. The newborn is dried immediately with a clean, dry cloth, but is still not breathing. The newborn’s mouth and nose are quickly but gently suctioned. Newborn B. is still not breathing.

ASSESSMENT
(History, physical examination, screening procedures/laboratory tests)

1. What information (from the case study above) will help you make a diagnosis or identify the problem/need, and why?

DIAGNOSIS
(Identification of problems/needs)

2. Based on this information, what is the diagnosis, and why?

CARE PROVISION
(Planning and intervention)

3. Based on your diagnosis, what is your plan of care for Newborn B., and why?

EVALUATION

Newborn B. starts to cry within 1 minute of being ventilated, respiration rate is found to be 40 breaths/minute, and there is no chest indrawing.

4. Based on these findings, what is your continuing plan of care for Newborn B., and why?
# SKILLS PRACTICE SESSION: NEWBORN RESUSCITATION

<table>
<thead>
<tr>
<th>PURPOSE</th>
<th>INSTRUCTIONS</th>
<th>RESOURCES</th>
</tr>
</thead>
</table>
| The purpose of this activity is to enable learners to practice newborn resuscitation using a bag and mask and achieve competency in the skills required. | This activity should be conducted in a simulated setting, using the appropriate model. | The following equipment or representation thereof:  
- Examination table  
- Newborn resuscitation model  
- Two towels or blankets for drying/warming  
- Cloth for positioning head  
- Suction apparatus  
- Self-inflating bag (newborn)  
- Newborn face masks  
- Clock  
- Hat if available |
| Learners should review Learning Guide: Newborn Resuscitation before beginning the activity. | | Learning Guide: Newborn Resuscitation |
| The facilitator/teacher should demonstrate the steps/tasks in the procedure of newborn resuscitation using a bag and mask. Under the guidance of the facilitator/teacher, learners should then work in pairs to practice the steps/tasks and observe each other’s performance, using Learning Guide: Newborn Resuscitation. | | Learning Guide: Newborn Resuscitation |
| Learners should be able to perform the steps/tasks in Learning Guide Newborn Resuscitation, before skill competency is assessed by the facilitator/teacher in the simulated setting, using Checklist Newborn Resuscitation. | | Checklist: Newborn Resuscitation |
| Finally, following supervised practice at a clinical site, the facilitator/teacher should assess the skill competency of each learner, using Checklist Newborn Resuscitation/ | | Checklist: Newborn Resuscitation |
CLINICAL SIMULATION: MANAGEMENT OF BIRTH ASPHYXIA

**Purpose:** The purpose of this activity is to provide a simulated experience for learners to practice problem-solving and decision-making skills in the management of birth asphyxia, with emphasis on thinking quickly and reacting (intervening) rapidly.

**Instructions:** The activity should be carried out in the most realistic setting possible, such as a skills lab or the labor and delivery area of a hospital, where equipment and supplies are available for emergency interventions.

- One learner should play the role of skilled provider. Other learners may be called on to assist the provider.
- The facilitator/teacher will give the learner playing the role of provider information about the patient’s condition and ask pertinent questions, as indicated in the left-hand column of the chart below.
- The learner will be expected to think quickly and react (intervene) rapidly when the facilitator/teacher provides information and asks questions. Key reactions/responses expected from the learner are provided in the right-hand column of the chart below.
- Procedures such as newborn resuscitation should be performed using a model and other appropriate equipment.
- Initially, the facilitator/teacher and learner will discuss what is happening during the simulation in order to develop problem-solving and decision-making skills. The italicized questions in the simulation are for this purpose. Further discussion may take place after the simulation is completed.
- As the learner’s skills become stronger, the focus of the simulation should shift to providing appropriate care for the life-threatening emergency situation in a quick, efficient and effective manner. All discussion and questioning should take place after the simulation is over.

**Resources:** Learning Guide for Newborn Resuscitation, newborn resuscitation model, newborn Ambu bag and mask, suction equipment, blanket, towels.
### Scenario 1
(Information provided and questions asked by the teacher)

<table>
<thead>
<tr>
<th>Question</th>
<th>Key Reactions/Responses (Expected from learner)</th>
</tr>
</thead>
</table>
| Mrs. C. has given birth to a 2800 g baby boy after a prolonged second stage of labor. This is her second pregnancy. Her first baby is alive. At birth, the newborn is blue and limp and does not breathe.  
  - What do you do? | - Dries the newborn rapidly, wraps it in a dry cloth/towel and moves it to a warm, flat surface  
  - Places the newborn on its back with its head slightly extended to open the airway  
  - Keeps the newborn wrapped or covered, except for the face and upper chest  
  - Suctions the mouth and then the nose  
  - Reassesses the newborn and if still not breathing starts ventilating  
  - Places the mask (of the Ambu bag) on the newborn’s face, covering the chin, mouth and nose  
  - Forms a seal between the mask and the face  
  - Squeezes the bag and checks seal by ventilating twice and observing if the chest rises  
  - Simultaneously tells the mother what is happening and provides reassurance  
  - If the newborn’s chest is rising, ventilates at 40 breaths/minute for 20 minutes or until the newborn starts to breathe  
  - Ventilates for 1 minute and then stops to quickly assess if the newborn is breathing.  
  - Does not suction deeply, because this may cause the newborn to stop breathing or may cause its heart to stop |
| 2. You have started ventilating, but the newborn’s chest does not rise.  
  - What will you do now? | - Rechecks and corrects, if necessary, the position of the newborn  
  - Repositions the mask on the newborn’s face to improve the seal between mask and face  
  - Squeezes the bag harder to increase ventilation pressure |
| 3. After repositioning the mask, the newborn’s chest rises when ventilated.  
  - What will you do now? | - Ventilates for 1 minute and then stops to quickly assess if the newborn is breathing |
| 4. After 1 minute of ventilating, the newborn is still not breathing. You remember that Mrs. C. received 100 mg pethidine 40 minutes prior to the birth.  
  - What will you do now? | - Continues ventilating until spontaneous breathing begins  
  - States that after vital signs have been established, will give naloxone 0.1 mg/kg body weight IV into the umbilical vein of the newborn |

**Discussion Question 1**: From which babies would you withhold naloxone?

**Expected Response**: Babies whose mother is suspected of having recently abused narcotic drugs (as this may cause withdrawal in the addicted infant.)
<table>
<thead>
<tr>
<th>SCENARIO 1</th>
<th>KEY REACTIONS/RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(Information provided and questions asked by the teacher)</strong></td>
<td><strong>(Expected from learner)</strong></td>
</tr>
</tbody>
</table>
| 5. After 2 more minutes of ventilating, the newborn starts to cry.  
  - What will you do now? |  
  - Stops ventilating and observes for 5 minutes after crying stops  
  - Determines that breathing is normal (30–60 breaths/minute) and that there is no indrawing of the chest and no grunting for 1 minute |
| 6. The newborn is now breathing normally.  
  - What ongoing care does the newborn need? |  
  - Prevents heat loss by placing in skin-to-skin contact with mother or putting under radiant heater  
  - Examines the newborn and counts the number of breaths/minute every 15 min for 1-2 hours  
  - Measures the newborn’s axillary temperature  
  - Encourages the mother to breastfeed and provides reassurance (A newborn that requires resuscitation is at higher risk of developing hypoglycemia.)  
  - Monitors closely for 24 hours |
| **Discussion Question 2: What would you do if the newborn is breathing but has severe indrawing of the chest?** | **Expected Response:** Give oxygen by nasal catheter or prongs, if possible, and arrange transfer to a facility with special care for sick newborns. |
KNOWLEDGE ASSESSMENT: MANAGING THE NEWBORN WITH PROBLEMS

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. The percentage of newborns needing resuscitation is:
   a. < 2%
   b. 3–10%
   c. 15–25%
   d. 25–30%

2. The first step in resuscitation of a newborn is:
   a. Ventilate
   b. Open the airway
   c. Assess heart rate

3. Resuscitation is not necessary if the newborn:
   a. Has a heart rate of > 100 beats/minute
   b. Has a heart rate of > 120 beats/minute
   c. Has a respiratory rate > 30L/minute
   d. Has a respiratory rate > 20/minute

4. The benefits of Kangaroo care for the preterm or low birth weight newborn are:
   a. Keeps infant warm and helps breathing be more regular
   b. Promotes breastfeeding
   c. Promotes growth and extra-uterine adaptation
   d. a) and b)
   e. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

5. The first assessment when a baby is born should be an assessment of the baby’s heart rate. _____

6. Room air, rather than oxygen, is sufficient for resuscitation in most cases. _____

7. An infant born before 37 weeks is considered “preterm.” _____

8. The preterm or low birth weight newborn requires initial feedings of glucose solution in addition to breast milk. _____
9. Periods of apnea > 20 seconds or difficulty waking a newborn may be signs of sepsis.

10. Sepsis is the primary diagnosis for newborns with multiple findings.
Session Objectives

By the end of the session, the learner will be able to:
- Discuss key elements in recognizing the newborn with problems
- Discuss the recognition and management of the newborn needing resuscitation
- Discuss the recognition and management of the low birth weight newborn
- Describe the key elements of Kangaroo Care
- Discuss the recognition and management of sepsis in the newborn

Management of Newborn Problems

- Education of families to recognize danger signs
- Working with families to develop/revise complication readiness plan
- Early recognition and appropriate management:
  - Preparation at every birth
  - Immediate assessment and care
  - Resuscitation if needed
  - Special care for LBW, premature and sick newborns

Minimum Preparation for EVERY Birth

These should be available and in working order:
- Two blankets or towels plus small cloth to position head
- Heat source
- Mucus extractor
- Self-inflating bag of newborn size
- 2 masks (for normal and small newborns)
- 1 clock (or watch)
- At least one person skilled in newborn resuscitation present at birth

Best Practices in Care of the Newborn with Problems

Best Practices in Maternal and Newborn Care
Signs of Good Health at Birth

Objective measures:
- Breathing**
- Heart rate above 100 beats/minute

Subjective measures:
- Vigorous cry
- Pink skin
- Good muscular tone
- Good reactions to stimulus

**Assessing breathing FIRST; Taking time to assess all of the above delays resuscitation if needed

Case Study

- Divide participants into groups of 3 or 4
- Each group should read the Case Study: Newborn with Problems and answer the questions
- Reassemble the group to discuss the answers

Immediate Care of the Newborn

- Assess breathing
- Keep head in a neutral position
- IMMEDIATELY assess respirations and need for resuscitation

Birth Asphyxia

- Definition: Failure to initiate and sustain breathing at birth
- Magnitude:
  - 3% of 120 million newborns each year in developing countries develop birth asphyxia and require resuscitation
  - An estimated 900,000 of these newborns die as a result of asphyxia
Factors Associated with Asphyxia

- Fetal distress:
  - Meconium
  - Abnormal presentation
- Prolonged or obstructed labor:
  - Prolonged rupture of membranes
- Complicated, traumatic or instrumental delivery
- Severe maternal infections
- Maternal sedation, analgesia or anesthesia
- Antenatal or intrapartal hemorrhage
- Preterm or post-term birth
- Congenital anomalies

WHO 1998.

Who Will Need Resuscitation?

- About 3–10% of all newborns
- Sometimes the need for resuscitation can be predicted, but often it cannot, so...

PREPARE FOR RESUSCITATION AT EVERY BIRTH

Equipment

- Oxygen
  - Room air is sufficient in most cases
- Cardiac Massage
  - Dangerous when done incorrectly
- Drugs
  - Very rarely needed if prompt and sufficient ventilation provided

What about….?

PREPARE FOR RESUSCITATION AT EVERY BIRTH
Steps in Resuscitation

- Anticipate need for resuscitation at every birth; be prepared with equipment in good condition
- Prevent heat loss (dry newborn and remove wet clothes)
- Assess breathing
- Resuscitate:
  - Open airway:
    - Position newborn
    - Clear airway
  - Ventilate
  - Evaluate

Assess Breathing

Newborn crying?

Yes

- Chest is rising symmetrically
- Frequency >30 breaths/min.

No

- Not breathing/ gasping
- Breathing < 30 breaths/min.

Provide routine care

Open Airway

- Position newborn on its back
- Place head in slightly extend position
- Suction mouth then nostrils:
  - 5 cm into the mouth
  - 3 cm into each nostril

Ventilate

- Select appropriate mask size to cover chin, mouth and nose with a good seal
- Squeeze bag with two fingers or whole hand; look for chest to rise
- If chest not rising:
  - Reposition head and mask
  - Increase ventilation
  - Repeat suctioning

Evaluate

After ventilating for about 1 minute, stop and look for spontaneous breathing

If no breathing, breathing is slow (< 30 breaths/ min.) or is weak with severe indrawing

If newborn starts crying/breathing spontaneously

Continue ventilating until spontaneous cry/breathing begins

• Stop ventilating
  • Do not leave newborn
  • Observe breathing
  • Put newborn skin-to-skin with mother and cover them both

Harmful and Ineffective Resuscitation Practices

Practices to be avoided include:

- Routine aspiration of the newborn’s mouth and nose as soon as the head is born
- Routine aspiration of the newborn’s stomach at birth
- Stimulation of the newborn by slapping or flicking the soles of her/his feet: only enough stimulation for mildly depressed-delays resuscitation
- Postural drainage and slapping the back: dangerous


Harmful and Ineffective Resuscitation Practices (cont.)

- Squeezing the chest to remove secretions from the airway
- Routine giving of sodium bicarbonate to newborns who are not breathing
- Intubation by an unskilled person
- Some traditional practices:
  - Putting alcohol in newborn’s nose
  - Sprinkling or soaking newborn with cold water
  - Stimulating anus
  - Slapping the newborn


Infection Prevention for Resuscitation

- Handwashing
- Use of gloves
- Careful suctioning if using a mucus extractor operated by mouth
- Careful cleaning and disinfection of equipment and supplies:
  - Do not reuse bulb—difficult to clean, poses risk of cross-infection
- Correct disposal of secretions
Documentation

Details of the resuscitation to be recorded include:
- Identification of newborn
- Condition at birth
- Procedures necessary to initiate breathing
- Time from birth to initiation of spontaneous breathing
- Clinical observations during and after resuscitation
- Outcome of resuscitation
- In case of failed resuscitation, possible reasons for failure
- Names of health care providers involved

Post-Resuscitation Tasks: Successful Resuscitation

- Do not separate mother and newborn
- Leave newborn skin-to-skin with mother
- Measure temperature, count breaths, observe for in-drawing and grunting every 15 minutes for 2 hours
- Encourage breastfeeding within 1 hour after birth

Post-Resuscitation Tasks: Unsuccessful Resuscitation

- Inform patients fully
- Provide counseling, as needed
- If culturally appropriate, allow parents private time with dead newborn
- Burial should be arranged according to regulations and parents’ wishes

Summary of Resuscitation: Principles of Success

- Readily available personnel
- Skilled providers
- Coordinated team
- Resuscitation tailored to newborn response
- Available and functioning equipment
- Avoidance of harmful and ineffective practices
- Follow rules for infection prevention
Immediate Care of the Newborn: Warmth

- Lay newborn on mother’s abdomen or other warm surface
- Immediately dry newborn with clean (warm) cloth or towel
- Remove wet towel and wrap/cover newborn, except for face and upper chest, with a second towel/cloth

Immediate Care of the Newborn: Warmth (cont.)

- Delay bath for at least 24 hours.
- Blood and amniotic fluid on newborn are not a risk to newborn, but are a risk to caregiver. Wear gloves and an apron when caring for the newborn.
- In areas with high HIV prevalence, consider bathing earlier to reduce risk of maternal-fetal transmission, and to reduce risk to caregiver and to other newborns.

The Low Birth Weight Newborn

- Birth weight = Gestation duration + intrauterine growth
- Less than 2500g:
  - Most low birth weight newborns in developing countries are term or near term (small for gestation age)
  - Increased risk of hypothermia, hypoglycemia and poor growth

The Preterm Newborn

- Born before 37 weeks
- Associated problems with prematurity:
  - Feeding
  - Respiratory
  - Jaundice
  - Intracranial bleed
  - Hypoglycemia
  - Temperature instability
Principles of Management for Low Birth Weight and Preterm Newborns

For stable LBW and preterm newborns:
- Warmth
- Feeding
- Detection and management of complications

Feeding

Early and exclusive breastfeeding:
- Breast milk = best nourishment
- Already warm temperature (if given directly from breast)
- Facilitated by kangaroo care

Warmth

As for all newborns:
- Lay newborn on mother’s abdomen or other warm surface
- Dry newborn with clean (warm) cloth or towel
- Remove wet towel and wrap/cover (including the head) with a second dry towel
- Bathe after temperature is stable

Warmth: Problem with Incubators

- Potential source of infection
- Often temperature controls malfunction
- Often share incubator for more than one newborn
- Often not the best method for keeping baby warm
- Need alternative method: skin-to-skin care
Definition of Kangaroo or Skin-to-Skin Care

- Early, prolonged and continuous skin-to-skin contact between a mother and her low birth weight newborn
- This could begin in the facility or after early discharge and continue at home

Eligibility for Continuous Kangaroo Mother Care

- Willingness of mother to do KMC
- Baby should be in stable condition:
  - No major illness present such as sepsis, pneumonia, meningitis, respiratory distress, convulsions
  - (Intermittent KMC under observation can be used for sick baby until baby is fully stable.)

How to Use Kangaroo Care

- Newborn’s position:
  - Held upright (or diagonally) and prone against skin of mother, between her breasts
  - Head is on its side under mother’s chin, and head, neck and trunk are well extended to avoid obstruction to airways
- Newborn’s clothing:
  - Usually naked except for nappy and cap
  - May be dressed in light clothing
  - Mother covers newborn with her own clothes and added blanket or shawl

How to Use Kangaroo Care (cont.)

- Newborn should be:
  - Breastfed on demand
  - Supervised closely and temperature monitored regularly
- Mother needs lots of support because kangaroo care:
  - Is very tiring for her
  - Restricts her freedom
  - Requires commitment to continue
Effectiveness of Kangaroo Care

- Randomized controlled trial
- Conducted in three tertiary and teaching hospitals in Ethiopia, Indonesia and Mexico
- Study effectiveness, feasibility, acceptability and cost of Kangaroo Mother Care when compared to conventional methods of care


Benefits of Kangaroo Care

- Is efficient way of keeping newborn warm
- Helps breathing of newborn to be more regular; reduces frequency of apneic spells
- Promotes breastfeeding, growth and extra-uterine adaptation
- Increases the mother’s confidence, ability and involvement in the care of her small newborn
- Seems to be acceptable in different cultures and environments
- Contributes to containment of cost—salaries, running costs (electricity, etc.)


General Principles

- Sepsis can appear any time from birth to end of newborn period
- Sepsis is primary diagnosis for babies with multiple findings
- Sepsis is more likely if associated with history of rupture of membrane for 18 hours or longer
- Signs of sepsis and asphyxia can coexist

Types of Newborn Infections

- Localized:
  - Umbilical cord infection – No pus/discharge with enduration less than 1 cm; no signs of sepsis
  - Skin infection – Fewer than 10 pustules or covering less than half the body
  - Eye infection – No pus, more than 7 days old
- General sepsis – infections more serious than the above or with signs of sepsis
General Sepsis

Signs may be difficult to recognize because they are not specific, but may include:
- Difficulty waking the baby
- Not able to suck
- Rapid or slow breathing or indrawing
- Periods of apnea > 20 seconds
- Pale, gray or blue color
- Rigid or limp limbs
- Severe jaundice
- Distended abdomen
- Signs of severe eye, skin or cord infection

Care for Newborn with Sepsis

- Give starting dose of antibiotics:
  - For a baby 2 kg or more: Ampicillin 50 mg/kg IM and gentamicin 5 mg/kg IM
  - For a baby < 2 kg: Ampicillin 50 mg/kg IM and gentamicin 4 mg/kg IM
- Refer, following referral guidelines* 
- Encourage breastfeeding, but use cup or spoon or syringe if unable to suck
- Keep baby warm
  * If referral is impossible, continue antibiotics for 10–14 days, giving ampicillin every 12 hrs if < 7 days old and every 8 hrs if > 7 days old and giving gentamicin once daily.

Summary

- Skilled care at all births when possible
- Have equipment available and working
- Quick assessment (breathing, etc.)
- Begin resuscitation immediately if needed:
  - Ventilate
  - Reassess frequently
- Skin-to-skin care to keep baby warm—especially LBW babies
- Sepsis is the primary diagnosis for the newborn with multiple findings

References

References (cont.)


## MODULE 22: BEST PRACTICES IN KANGAROO MOTHER CARE (KMC) — SESSION PLAN

### MATERNAL AND NEWBORN CARE: TECHNICAL UPDATE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Practices in Kangaroo Mother Care (KMC)</td>
<td>120 min</td>
</tr>
</tbody>
</table>

### SESSION OBJECTIVES

**By the end of this session, participants will be able to:**
- Define Kangaroo Mother Care (KMC)
- Describe the benefits of KMC
- Assist and counsel the mother in the use of KMC

### Methods and Activities

**Illustrated presentation/discussion: Best practices in Kangaroo Mother Care (30 min)**
- Use questions and discussion throughout presentation as indicated on slides.
- Cover the following:
  - Objectives of session
  - Definition of Kangaroo Mother Care
  - Benefits of KMC to the baby
  - Benefits of KMC to the mother
  - Step-by-step use of KMC
  - Counseling for mother/family

**Skills demonstration and practice/role play: Kangaroo Mother Care (90 min)**
- Demonstration (can be incorporated into presentation/discussion)
- Practice: Divide participants into groups of three. One participant reads learning guide, one acts as the mother and one helps mother to do KMC. The three should each rotate into each role.

### Materials/Resources

- Boxlight projector
- PowerPoint presentation
- Overhead projector with transparencies (Handouts of presentations if no electricity)
- Learning Guide for KMC
- Checklist for KMC
- Learning aids:
  - What is Kangaroo Mother Care?
  - How Does KMC Help the Baby and Mother?
  - Pictorial on How to Wrap Baby
- Long cloth
- Doll baby
## SKILLS PRACTICE SESSION: KANGAROO MOTHER CARE

<table>
<thead>
<tr>
<th>PURPOSE</th>
<th>INSTRUCTIONS</th>
<th>RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The purpose of this activity is to enable learners to practice assisting a mother in the use of KMC.</td>
<td>This activity should be conducted in a simulated setting. Learners should review Learning Guide for: Kangaroo Mother Care before beginning the activity. The facilitator/teacher should demonstrate the steps/tasks in each learning guide one at a time, having one of the students play the role of the mother. The facilitator/teacher must explain each step of procedure and any cautions associated with each step. Under the guidance of the facilitator/teacher, learners should then work in groups of three and practice the steps/tasks in the Learning Guide and observe each other’s performance: while one learner acts as a mother, the second learner reads the learning guide while the third student assists the mother with KMC. Learners should then reverse roles.</td>
<td>Learning Guide for KMC • Long piece of cloth • Baby doll Learning Guide: Kangaroo Mother Care Learning Guide: Kangaroo Mother Care CheckList: Kangaroo Mother Care</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Learners should be able to perform the steps/tasks in the CheckList before skills competency is assessed in a simulated setting.
KNOWLEDGE ASSESSMENT: KANGAROO MOTHER CARE

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Kangaroo Mother Care includes all of the following except:
   a. Use with a premature or small for dates baby
   b. Skin-to-skin contact between mother and baby
   c. Separating the mother and baby only when something needs to be done to one of them
   d. Exclusive breastfeeding

2. Benefits of KMC to the baby include:
   a. Breathing becomes regular and stable
   b. Temperature becomes normal and stable
   c. Skin becomes softer and smoother
   d. a) and b)
   e. All of the above

3. For KMC, the baby is positioned between the mother’s breasts:
   a. With the chest of the baby touching the chest of the mother
   b. With the baby’s hands below the mother’s breasts
   c. With a cloth between the baby’s legs

4. For KMC, the cloth that secures the baby onto the mother:
   a. Should tie in front of the mother
   b. Should be short and square
   c. Should support the baby’s head by pulling the wrap up to just under the baby’s ear

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

5. When the mother needs to sleep, the baby should be removed from skin-to-skin contact on the mother’s chest to prevent smothering. ______

6. Another family member may replace the mother for skin-to-skin contact for short periods of time. ______
Session Objectives

- Define Kangaroo Mother Care (KMC)
- Describe the benefits of KMC
- Assist and counsel the mother in the use of KMC

Question ??

- What is Kangaroo Mother Care?

Kangaroo Mother Care

- Is used for small for dates or premature infants
- Has three parts:
  1. Skin-to-skin contact between the baby’s front and the mother’s chest – starts at birth and continues day and night
  2. Exclusive breastfeeding – begins right after birth and continues “on demand,” at least every 2 hours
  3. Support to the mother and baby – whatever the mother or baby needs is done without separating them
Question ??

How does KMC help the baby?

KMC Helps the Baby

- Breathing becomes regular and stable
- Temperature becomes normal and stable
- Immunity is improved
- Infections are reduced
- Breastfeeds better
- Gains weight

Question ??

How does KMC help the mother?

KMC Benefits the Mother

- Helps her to bond with her baby
- Helps her feel confident in caring for a small, fragile newborn
Question ??

- Who wants to demonstrate KMC?
  The teacher will provide a doll and a long cloth. If no one in the class can demonstrate, the teacher will demonstrate on a student.

How to Use KMC
(Use the Learning Guide to Guide the Demonstration)

- Put the baby between the mother’s breasts
- Wrap the baby and mother together
- Tie the ends of the cloth into a secure knot behind the mother
- Have the mother put on a loose blouse or dress over the baby

Advice to the Mother/Family

- To sleep, the mother should keep her body raised about 30 degrees so the baby is in a heads-up position
- Use KMC continuously
- Breastfeed on demand, at least every 2 hrs
- Another family member can replace the mother for short periods of time
- Continue KMC until the baby weighs at least 2,500 grams
# Module 23: Midwifery Education: Opportunities and Challenges—Session Plan

## Maternal and Newborn Care: Technical Update

<table>
<thead>
<tr>
<th>Session</th>
<th>Topic</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Midwifery Education: Opportunities and Challenges</td>
<td>45 min</td>
</tr>
</tbody>
</table>

### Session Objectives

By the end of this session, participants will be able to:

- Discuss goals in educating midwives
- Define core competencies and their role in curriculum development and design
- List the challenges in educating midwives, and some possible ways to address these challenges

### Methods and Activities

- Illustrated presentation/discussion: Opportunities and challenges in midwifery education (45 min)
  - Ask questions of the larger group throughout the session to elicit their experiences as midwifery educators.
  - Intersperse presentation with questions, examples and discussion.
  - Be sure to cover the following topical areas:
    - Roles of midwives
    - Professional development continuum
    - Core competencies
    - Characteristics of effective teaching
    - Learning approaches
    - Challenges in midwifery education
  - Summarize key points.

### Materials/Resources

- Boxlight projector
- PowerPoint presentation
- Overhead projector with transparencies (Handouts of presentations if no electricity)
KNOWLEDGE ASSESSMENT: MIDWIFERY EDUCATION: OPPORTUNITIES AND CHALLENGES

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Core competencies in midwifery education:
   a. Encompass skills that extend beyond those that are common to all students
   b. Should be essential for graduation
   c. Encompass psychomotor skills but do not pertain to knowledge or attitudes

2. Effective midwifery education:
   a. Does not need to focus on the theoretical learning since the practical performance of core competencies is the goal
   b. Includes a balance of theoretical and practical experiences
   c. Uses learning guides and checklists for the development of decision-making and problem-solving skills

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

3. Teaching and learning are more effective when students actively participate in their learning. _____

4. Teaching and learning are more effective when feedback on students’ performance is delayed at least 1 day and when students are punished for incorrect performance. _____

5. Students should not be given their core competencies until the month before their final examination. _____
Midwifery Education: Opportunities and Challenges

Best Practices in Maternal and Newborn Care

Objectives

- Discuss goals in educating midwives
- Define core competencies and their role in curriculum development and design
- List the challenges in educating midwives, and some possible ways to address these challenges

Roles of Midwives

Education should prepare midwives to function as:

- Caregivers
- Decision-makers
- Communicators
- Community leaders
- Managers

What are some roles of midwives?
Professional Development Continuum

- Begins with undergraduate education
- Continues throughout professional practice
- Includes in-service training and/or continuing education
- Providers should be life-long learners

What is a core competency and why is it important in midwifery education?

Core Competencies

- Aspects of a subject or discipline that are common to all students, essential to practice and essential to master in order to graduate from an academic program and enter into practice.
- Each core competency for an academic program will encompass cognitive (knowledge), psychomotor (skills) and affective (values and behaviors) domains that are observable and can be appraised.

Defining Core Competencies

- What is the job description for the position the student may hold after graduation?
- What knowledge, skills and attitudes are experienced health professionals in that cadre applying in the workplace?
- What are the licensing requirements in the related field?
- What are the global standards for core competencies?
Effective Approaches

- Is teaching and learning a science or an art?
- Probably a little of both.
- Effective teaching is a learned ability.
- There are concepts and principles based on research that can help make teaching and learning more effective.
- What are some of the approaches that you have used and found to be effective?

Teaching and Learning Are More Effective When . . . #1

- Students are ready and want to learn.
- Students are aware of what they need to learn (i.e., clear learning objectives or outcomes).
- New KSAs build on what students already know or have experienced.
- Students are active and participate in their learning.

Teaching and Learning Are More Effective When . . . #2

- Students are encouraged to apply critical thinking and alternative approaches supported by sound reasons.
- New KSAs are realistic, relevant and can be put to immediate use.
- New knowledge, skills and attitudes are demonstrated to students, applied by students and integrated into the students’ world.

Teaching and Learning Are More Effective When . . . #3

- Numerous opportunities are given for students to practice and to receive feedback on their performance.
- Feedback to students on their performance is immediate, constructive and nonjudgmental.
- Teaching is interesting, pleasant and exciting.
Teaching and Learning Are More Effective When . . . #4

- A variety of teaching methods and techniques is used.
- Teaching moves step-by-step from simple to complex, and is organized, logical and practical.

Teaching and Learning Are More Effective When . . . #5

- Ideas and concepts are presented clearly, alternative explanations are presented and teachers check frequently for students’ understanding.
- The learning environment is realistic, relevant and one of trust, mutual respect, relative calm, helpfulness, freedom of expression and acceptance of different opinions and approaches.

The Approaches

1. Adult learning
2. Participatory learning
3. Deep learning
4. Experiential learning
5. Problem-based learning
6. Mastery learning
7. Life-long learning

What Are Some of the Challenges You Face in Teaching?

- Divide into groups of three or four
- On a flip chart, write the three top challenges you face in teaching
- Beside each challenge write one solution/approach to overcome
- After 15 minutes, report back to the large group
Challenges #1

- Information overload (adding new content to the curriculum)
- Large numbers of students and insufficient numbers of teaching staff
- Limited opportunities to practice and master skills

Challenges #2

- Poor monitoring of students’ progress, leading to limited opportunities for providing feedback to students
- Facilities used for clinical practice that are not always representative of the facilities, such as outpatient clinics, where graduates will work

Challenges #3

- The need to develop competencies that are difficult to teach, such as decision-making, problem solving, ethics and values
- The difference between the ideal world, where all resources are available, and the real world, where resources and technology are scarce

Challenges #4

- Poor quality materials and equipment, and limited access to computers and up-to-date reference materials
- Little coordination between different teaching units and different levels of study, and between theoretical and practical portions of academic programs
Challenges #5

- Practical experiences that are separated from, and do not always reflect, the associated theoretical experiences
- High turnover of teaching staff

Challenges #6

- Teachers who have no formal training in educational theories or methodologies
- Lack of incentives for teachers to improve their own performance

Summary

- Effective undergraduate education should offer a balance of theoretical and practical experiences.
- Students should be aware of the core competencies they will develop within courses in the curriculum.
- Teachers should participate in a faculty development program to develop teaching competencies.

References


**SESSION OBJECTIVES**

By the end of this session, participants will be able to:
- Explain why nutrition is important for pregnant and postpartum women
- Describe the indicators of maternal nutrition and their significance
- Explain the nutritional requirements for pregnant and postpartum women
- Demonstrate how to effectively carry out nutritional counseling for pregnant and postpartum women

<table>
<thead>
<tr>
<th>Methods and Activities</th>
<th>Materials/Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illustrated presentation/discussion: Nutrition in pregnancy (40 min)</td>
<td>Boxlight projector</td>
</tr>
<tr>
<td>• Ask questions of the larger group throughout presentation.</td>
<td>PowerPoint presentation</td>
</tr>
<tr>
<td>• Be sure to cover:</td>
<td>OR</td>
</tr>
<tr>
<td>o Importance of nutrition to pregnancy outcome</td>
<td>Overhead projector with</td>
</tr>
<tr>
<td>o Importance of nutrition to HIV-positive women</td>
<td>transparencies (Handouts of</td>
</tr>
<tr>
<td>o Indicators of maternal nutritional status</td>
<td>presentations if no electricity)</td>
</tr>
<tr>
<td>o Micronutrient deficiencies</td>
<td>Two exercises and answer</td>
</tr>
<tr>
<td>o Nutritional requirements of the pregnant woman</td>
<td>sheets</td>
</tr>
<tr>
<td>o Nutritional requirements of the HIV-positive pregnant woman</td>
<td>Handouts</td>
</tr>
<tr>
<td>o Nutritional assessment</td>
<td>Flip charts</td>
</tr>
<tr>
<td>o Education and counseling</td>
<td>Markers</td>
</tr>
<tr>
<td>o Importance of nutrition to the lactating mother</td>
<td>Note paper</td>
</tr>
<tr>
<td>o Indicators of nutritional status in the lactating woman</td>
<td>AFASS Criteria Handout</td>
</tr>
<tr>
<td>o Nutritional requirements of the lactating mother</td>
<td></td>
</tr>
<tr>
<td>o Nutritional requirements for the lactating HIV-positive mother</td>
<td></td>
</tr>
</tbody>
</table>

**Exercises: Nutrition and nutritional counseling of pregnant women (20 min)**
- Distribute the exercise sheet and ask participants to work in pairs to answer the questions in 10 minutes.
- Ask a pair to read aloud their answer to each question, and ask other participants to react and give the correct answer if they disagree with the answer given. Provide the correct answer.

Illustrated presentation/discussion: Nutritional care for lactating women (20 min)
- Ask questions and provide answers and discussion throughout presentation.

**Exercises: Nutrition and nutritional counseling of pregnant women (10 min)**
- Distribute the exercise sheet and ask participants to work in pairs to answer the questions in 5 minutes.
- After 5 minutes, ask a pair to read aloud their answer to each question, and ask other participants to react and give the correct answer if they disagree with the answer given. Provide the correct answer.
EXERCISES—PART A: NUTRITION AND CARE FOR PREGNANT WOMEN

EXERCISES

Exercise 1

Mary, 26, is married and is 6 months pregnant. Mary is expecting her second child. In Mary’s medical note book, it is recorded that she weighed 52 kg before she became pregnant for the second time and she is HIV-negative. Mary is 1.60 m tall. For this second pregnancy, Mary came to the first antenatal visit when she was 4 months pregnant and her weight was 54 kg. Her actual weight is still 54 kg. Mary explained that she is tired. Mary does not take any supplements.

a. From the information provided, what is Mary’s nutritional status?

b. What additional information do you need to be able to accurately define Mary’s nutritional status/problems and how will you get that information?

c. How will you use that information during the counseling session with Mary?

Exercise 2

Jane is 30 and is pregnant for the first time. Jane is HIV-positive. Jane’s weight was 55kg before she became pregnant. Jane is 7 months pregnant. Jane’s weight at 7 months of pregnancy is 62 kg. According to Jane’s medical records, Jane has regularly gained weight between the second and fifth months. Since last month, Jane did not gain any weight. Jane complains of thrush. Jane reported that she takes iron and folic acid tablets every day.

a. What is Jane’s nutritional status?

b. What information is missing to help you have a better idea of the evolution of Jane’s nutritional status?
EXERCISES—PART B: NUTRITION AND CARE FOR POSTPARTUM WOMEN

EXERCISES

Exercise 1

Martha, 25, comes to see you for the first time for counseling. She tested positive for HIV. She has a 3-month-old son, whom she is still breastfeeding, and plans to continue to exclusively breastfeed him until he is 5 months old. Martha explains that she is worried about her health and has not been able to eat well. She feels she has lost weight. Martha has diarrhea, fever, and complains that she is tired.

a. What are the nutritional care issues of Martha?
b. What nutrition and care interventions will you undertake to help Martha?

Exercise 2

Dorothy comes to see you because she has now lost 4 kg and it has been 2 months since she delivered. Dorothy is HIV-negative.

a. What are the points you will cover during nutrition assessment?
b. What are Dorothy’s nutritional problems and what are the nutritional interventions that will help her?
The handouts will be used during counseling sessions and during clinical practice. Participants observing the counseling session should use the checklist to record observations and comments and to provide feedback in a structured manner.

**HANDOUTS**

**Handout 1: Dietary Management of Common Problems in HIV Infection**
This handout can be used during role-play or in clinical practice to help counsel on the dietary management of common HIV-related problems.

<table>
<thead>
<tr>
<th>DIETARY PROBLEM</th>
<th>MESSAGES</th>
</tr>
</thead>
</table>
| Anorexia or loss of appetite | • Eat small frequent meals spaced throughout the day (5–6 meals/day).  
  • Schedule regular eating times.  
  • Eat protein from animal or plant sources with snacks and meals whenever possible.  
  • Drink plenty of liquids, preferably between meals.  
  • Take walks before meals to stimulate appetite. |
| Sores in the mouth or throat | • Avoid citrus fruits, tomatoes, and spicy, salty, sweet or sticky foods.  
  • Drink liquids with a straw to ease swallowing.  
  • Eat foods at room temperature or cold.  
  • Eat soft, pureed or moist foods such as porridge, mashed bananas, potatoes, carrots or other non-acidic vegetables and fruits.  
  • Avoid smoking, caffeine and alcohol.  
  • Rinse mouth daily to prevent thrush with 1 teaspoon baking soda mixed in a glass (250 ml) of warm boiled water. Do not swallow the mixture. |
| Nausea and vomiting | • Avoid having an empty stomach, which makes the nausea worse.  
  • Eat small, frequent meals.  
  • Try dry, salty, and bland foods, such as dry bread or toast, or other plain dry foods and boiled foods.  
  • Drink plenty of liquids between meals rather than with meals.  
  • Avoid foods with strong or unpleasant odors, greasy or fried foods, alcohol, and coffee.  
  • Do not lie down immediately after eating; wait 1-2 hours.  
  • If vomiting, drink plenty of fluids to replace fluids and prevent dehydration. |
| Diarrhea | • Drink plenty of fluids (8–10 cups a day) such as diluted fruit juices, soup and water.  
  • Eat small, frequent meals.  
  • Eat bananas, mashed fruit, soft, boiled white rice and porridge, which help slow transit time and stimulate the bowel.  
  • Avoid intake of high fat or fried foods and foods with insoluble fiber; remove the skin from fruits and vegetables.  
  • Avoid coffee and alcohol.  
  • Eat food at room temperature; very hot or very cold foods stimulate the bowels and diarrhea worsens.  
  **If diarrhea is severe:** |
<table>
<thead>
<tr>
<th>DIETARY PROBLEM</th>
<th>MESSAGES</th>
</tr>
</thead>
</table>
|                 | • Give oral rehydration solution to prevent dehydration.  
|                 | • Withhold food for 24 hours or restrict food to clear fluids (e.g., soups, soft foods, white rice, porridge, and mashed fruit and potatoes). |
| Constipation    | • Drink plenty of fluids, especially water.  
|                 | • Increase intake of fiber by eating vegetables and fruits.  
|                 | • Do not use laxatives or enemas. |
| Bloating        | • Avoid foods associated with cramping and bloating (cabbage, beans, onions, green peppers, eggplant).  
|                 | • Eat slowly and try not to talk while chewing. |
| Altered taste   | • Use a variety of flavor enhancers such as salt, spices and herbs to increase taste acuity and mask unpleasant taste sensations.  
|                 | • Try different textures of food.  
|                 | • Chew food well and move around mouth to stimulate taste receptors. |
| Fever           | • Drink plenty of fluids throughout the day.  
|                 | • Eat smaller, more frequent meals at regularly scheduled intervals. |
| Fat malabsorption | • Eliminate oils, butter, ghee, margarine and foods that contain or are prepared with these.  
|                 | • Trim all visible fat from meat and remove the skin from chicken.  
|                 | • Avoid deep-fried, greasy or high fat foods.  
|                 | • Eat smaller, more frequent meals spaced out evenly throughout the day.  
|                 | • Take a daily multivitamin, if available. |
| Muscle wasting  | • Increase quantity of food and frequency of consumption.  
|                 | • Eat a variety of foods.  
|                 | • Eat protein from animal and vegetal origin.  
|                 | • Increase intake of cereals and staples.  
|                 | • Eat small but frequent meals. |
| High blood Cholesterol | • Eat a low fat diet and limit intake of foods rich in cholesterol and saturated fat.  
|                 | • Eat fruits and vegetables daily.  
|                 | • Exercise regularly according to capacity. |
| High triglycerides | • Limit sweets and excessive carbohydrate and saturated fat intake.  
|                 | • Eat fruits, vegetables and whole grains daily.  
|                 | • Avoid alcohol and smoking.  
|                 | • Exercise regularly according to capacity. |

# Handout 2: Safe Food Handling Messages

This handout can be used by participants when role-playing or in clinical practice to counsel on safe food handling practices.

<table>
<thead>
<tr>
<th>Safe Food Handling Messages</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wash hands thoroughly before preparing, handling, and eating food and after using the toilet or changing diapers or nappies.</td>
<td></td>
</tr>
<tr>
<td>Wash and keep food preparation surfaces, utensils and dishes clean.</td>
<td></td>
</tr>
<tr>
<td>Wash all fruit and vegetables with clean water before eating, cooking or serving.</td>
<td></td>
</tr>
<tr>
<td>Avoid allowing raw food to come into contact with cooked food.</td>
<td></td>
</tr>
<tr>
<td>Ensure all food is cooked thoroughly, especially meats and chicken.</td>
<td></td>
</tr>
<tr>
<td>Avoid storing cooked food unless one has access to a refrigerator.</td>
<td></td>
</tr>
<tr>
<td>Keep food covered and stored away from insects, flies, rodents and other animals.</td>
<td></td>
</tr>
<tr>
<td>Use safe water (boiled or bottled) for drinking, cooking, and cleaning dishes and utensils.</td>
<td></td>
</tr>
<tr>
<td>Do not eat moldy, spoiled or rotten foods.</td>
<td></td>
</tr>
<tr>
<td>Do not eat raw eggs or foods that contain raw eggs.</td>
<td></td>
</tr>
<tr>
<td>Serve all food immediately after preparation, especially if it cannot be kept hot.</td>
<td></td>
</tr>
<tr>
<td>Do not use bottles with teats to feed infants; use a cup instead.</td>
<td></td>
</tr>
</tbody>
</table>

Handout 3: Side Effects and Recommended Food Intakes with Modern Medications

This handout can be used during the nutritional counseling on the dietary management of food and nutrition implications of common modern medications taken by PLWHA. The handout lists the medication, the purpose, the recommendations on how to take the drug, and the potential side effects.

<table>
<thead>
<tr>
<th>MEDICATION</th>
<th>PURPOSE</th>
<th>RECOMMENDED TO BE TAKEN</th>
<th>POTENTIAL SIDE EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfonamides: Sulfamethoxazole, Cotrimoxazole (Bactrim®, Septra®)</td>
<td>Antibiotic for treatment of pneumonia and toxoplasmosis</td>
<td>With food</td>
<td>Nausea, vomiting and abdominal pain.</td>
</tr>
<tr>
<td>Rifampin</td>
<td>Treatment of tuberculosis</td>
<td>On an empty stomach 1 hour before or 2 hours after meals</td>
<td>Nausea, vomiting, diarrhea and loss of appetite. Altered change and may interfere with folate and vitamin B12 levels. Avoid alcohol.</td>
</tr>
<tr>
<td>Isoniazid</td>
<td>Treatment of tuberculosis</td>
<td>1 hour before or 2 hours after meals</td>
<td>Anorexia and diarrhea. May cause possible reactions with foods such as bananas, beer, avocados, liver, smoked pickled fish, yeast and yogurt. May interfere with Vitamin B6 metabolism, therefore may require Vitamin B6 supplement. Avoid alcohol.</td>
</tr>
<tr>
<td>Quinine</td>
<td>Treatment of malaria</td>
<td>With food</td>
<td>Abdominal or stomach pain, diarrhea, nausea, vomiting; lower blood sugar.</td>
</tr>
<tr>
<td>Sulfadoxine and Pyrimethamine (Fansidar®)</td>
<td>Treatment of malaria</td>
<td>With food and continuously drink clean boiled water</td>
<td>Nausea, vomiting, taste loss and diarrhea. Not recommended if folate deficient. Not recommended for women who are breastfeeding.</td>
</tr>
<tr>
<td>Chloroquine</td>
<td>Treatment of malaria</td>
<td>With food</td>
<td>Stomach pain, loss of appetite, nausea, vomiting. Not recommended for women who are breastfeeding.</td>
</tr>
<tr>
<td>Fluconazole</td>
<td>Treatment of candida (thrush)</td>
<td>With food</td>
<td>Nausea, vomiting, diarrhea. Can be used during breastfeeding.</td>
</tr>
<tr>
<td>Nystatin</td>
<td>Treatment of thrush</td>
<td>With food</td>
<td>Infrequent occurrence of diarrhea, vomiting, nausea.</td>
</tr>
</tbody>
</table>
DESCRIPTION OF THE AFASS CRITERIA

Acceptable: The mother perceives no barrier to replacement feeding. Barriers may have cultural or social reasons, or be due to fear of stigma or discrimination. According to this concept the mother is under no social or cultural pressure not to use replacement feeding, and she is supported by family and community in opting for replacement feeding, or she will be able to cope with pressure from family and friends to breastfeed, and she can deal with possible stigma attached to being seen with replacement food.

Feasible: The mother (or family) has adequate time, knowledge, skills and other resources to prepare the replacement food and feed the infant up to 12 times in 24 hours. According to this concept the mother can understand and follow the instructions for preparing infant formula and with support from the family can prepare enough replacement feeds correctly every day, and at night, despite disruptions to preparation of family food or other work.

Affordable: The mother and family, with community or health-system support if necessary, can pay the cost of purchasing/producing, preparing and using replacement feeding, including all ingredients, fuel, clean water, soap and equipment, without compromising the health and nutrition of the family. This concept also includes access to medical care if necessary for diarrhea and the cost of such care.

Sustainable: Availability of a continuous and uninterrupted supply and dependable system of distribution for all ingredients and products needed for safe replacement feeding, for as long as the infant needs it, up to one year of age or longer. Also, the mother and family are reasonably certain that they will be able to pay the costs cited under “Affordable” for as long as the infant needs replacement feeding.

Safe: Replacement foods are correctly and hygienically prepared and stored, and fed in nutritionally adequate quantities, with clean hands and using clean utensils, preferably by cup. This concept means that the mother or caregiver:
- Has access to a reliable supply of safe water (from a piped or protected-well source)
- Prepares replacement feeds that are nutritionally sound and free of pathogens
- Is able to wash hands and utensils thoroughly with soap, and to regularly boil the utensils to sterilize them
- Can boil water for preparing each of the baby’s feeds
- Can store unprepared feeds in clean, covered containers and protect them from rodents, insects and other animals

# Essential Nutrition Actions for Pregnant Women: Key Messages for Health Providers

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Messages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure adequate food intake to ensure fetal growth and to prepare for breastfeeding</td>
<td>• Counsel on the importance of increasing meal frequency to at least 3 meals and a snack every day</td>
</tr>
<tr>
<td>Recommend diversified diet to improve proteins and micronutrient intake</td>
<td>Counsel on daily consumption of:</td>
</tr>
<tr>
<td></td>
<td>• Washed fruits and well-cooked vegetables</td>
</tr>
<tr>
<td></td>
<td>• Foods from animal origin if feasible and acceptable</td>
</tr>
<tr>
<td></td>
<td>• Whole grain/cereals</td>
</tr>
<tr>
<td></td>
<td>• Cereals and dried legumes, mixed</td>
</tr>
<tr>
<td>Recommend use of iodized salt to meet iodine needs and prevent iodine deficiency</td>
<td>• Encourage daily consumption of iodized salt</td>
</tr>
<tr>
<td>Prescribe iron and folic acid supplements (60 mg iron, 400µg of folic acid)</td>
<td>• Counsel on how to improve absorption of iron and how to manage side effects</td>
</tr>
<tr>
<td></td>
<td>• Treat malaria and promote the use of insecticide-treated bed nets</td>
</tr>
<tr>
<td></td>
<td>• Administer presumptive treatment for hookworm in the second term of pregnancy</td>
</tr>
<tr>
<td></td>
<td>• Counsel on having additional rest</td>
</tr>
</tbody>
</table>

**Special Considerations for HIV-positive pregnant women**

In addition to the recommendations and messages listed above:

<table>
<thead>
<tr>
<th>Increase food intake</th>
<th>Counsel on the importance of increasing meal frequency:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• At least an extra meal or two snacks/day</td>
</tr>
<tr>
<td></td>
<td>• Refer HIV-positive pregnant women who do not have food security for food assistance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hygiene and food safety</th>
<th>Promote the following actions:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Drinking clean water</td>
</tr>
<tr>
<td></td>
<td>• Washing hands before meals and after using toilets</td>
</tr>
<tr>
<td></td>
<td>• Keeping hands and food preparation areas clean</td>
</tr>
<tr>
<td></td>
<td>• Separating raw foods from cooked foods and the utensils used with them</td>
</tr>
<tr>
<td></td>
<td>• Cooking fresh and reheated foods thoroughly</td>
</tr>
<tr>
<td></td>
<td>• Keeping food at safe temperatures</td>
</tr>
<tr>
<td></td>
<td>• Using safe water and raw materials</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Psycho-social support</th>
<th>• Provide psycho-social support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Refer women to community support groups</td>
</tr>
</tbody>
</table>

| Dietary management of complications such as diarrhea, vomiting, anorexia, and thrush | • Provide health education, information and advice on managing common side-effects, such as diarrhea, nausea and vomiting (Refer to Handout 1) |

<table>
<thead>
<tr>
<th>Dietary management of food and drug interactions</th>
<th>• Counsel on dietary modifications as needed in response to the metabolic syndrome associated with ARV treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Provide treatment advice on dietary needs or restrictions of specific ARV drug regimens (Refer to Handouts 1 and 3)</td>
</tr>
</tbody>
</table>
KNOWLEDGE ASSESSMENT:
NUTRITION AND CARE IN PREGNANCY AND THE POSTPARTUM

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Night blindness in a pregnant woman may be a sign of:
   a. Anemia
   b. Vitamin A deficiency
   c. Vitamin C deficiency
   d. a) and b)
   e. All of the above

2. Iodine deficiency during pregnancy may result in:
   a. A goiter in the pregnant woman
   b. The birth of a baby with irreversible brain damage
   c. Severe anemia
   d. a) and b)
   e. All of the above

3. Counseling to prevent anemia in the pregnant woman should include:
   a. Take 120 mg iron + 400 mcg folic acid every day for 3 months
   b. Drink orange, pineapple or citrus juice while taking iron and folic acid
   c. Restrict consumption of tea, coffee and cocoa
   d. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

4. Anemia in HIV-infected women is an independent predictor of more rapid HIV progression and mortality. _____

5. Malnutrition in pregnancy may increase the risk of mother-to-child transmission of HIV in women who are HIV+. _____

6. The indicators of malnutrition in HIV-infected pregnant women are the same as in the non-infected pregnant women. _____

7. WHO recommends giving breastfeeding women a high dose of vitamin A (200000 IU) within 6 weeks after delivery to increase breast milk content of vitamin A. _____

8. The lactating woman, as the pregnant woman, requires a diversified diet to meet micronutrient needs. _____
Objectives

- Explain why nutrition is important for pregnant and postpartum women
- Describe the indicators of maternal nutrition and their significance
- Explain the nutritional requirements for pregnant and postpartum women
- Demonstrate how to effectively carry out nutritional counseling for pregnant and postpartum women

PART 1

Why is nutrition important for pregnant women?

- Malnutrition in pregnant women affects birth outcomes
- Maternal malnutrition may lead to:
  - Increased risk of fetal, neonatal and infant death
  - Intrauterine growth restriction, low birth weight and prematurity
  - Birth defects
  - Cretinism
  - Brain damage
  - Increased risk of infection
Why is nutrition important for pregnant women? (cont.)

Special considerations for HIV-positive women:
- HIV-positive women tend to gain less weight than HIV-negative women during pregnancy.
- Wasting during pregnancy is more common in HIV-infected women than in the general population.
- Anemia is often more severe in HIV-infected women than in other women. Anemia in HIV-infected women is an independent predictor of more rapid HIV progression and mortality.

Malnutrition during pregnancy may increase the risk of MTCT by:
- Resulting in low fetal stores of some nutrients. This may increase the vulnerability of infants to HIV.
- Impairing the integrity of the placenta, the genital mucosal barrier and the gastrointestinal tract. Transmission of HIV from mother to infant may be facilitated.
- Causing low serum retinol (Vitamin A) levels that are associated with an increased risk of MTCT.

2. Indicators of Maternal Nutritional Status

Indicators of malnutrition include:
- Weight gain ≤ 11.5 kg
- Weight gain ≤ 1 kg/month in the last trimester of the pregnancy
- Hemoglobin level < 11 g/dL
- Vitamin A deficiency
- Presence of goiter
- Presence of clinical signs of micronutrient deficiencies

Indicators of Nutritional Status

- Micronutrient deficiencies
- Iron deficiency occurs when an insufficient amount of iron is taken in or absorbed to meet the body’s requirements. Anemia is the major clinical manifestation of iron deficiency:
  - The pregnant woman is moderately anemic if Hb < 7–11 g/dL
  - The pregnant woman is severely anemic if Hb < 7 g/dL
Micronutrient Deficiencies

- **Night blindness** may be a sign of Vitamin A deficiency in the pregnant women.
- **Causes of vitamin A deficiency include:**
  - Inadequate intake
  - Recurrent infections
  - Frequent reproductive cycling and short intervals between pregnancies

Micronutrient Deficiencies (cont.)

- **Iodine deficiency**: The most common sign is goiter (enlargement of the thyroid).
- **The cause of iodine deficiency** is the consumption of water and foods grown on iodine-deficient soil.
- Iodine deficiency during pregnancy negatively affects the development of the fetus and results in the birth of cretins. The mental retardation resulting from iodine deficiency during pregnancy is irreversible.

Indicators of Nutritional Status: HIV-Positive Women

- An HIV-positive woman’s nutritional status before and during pregnancy influences both her health and survival and that of her newborn child. HIV infection increases energy requirements because of elevated resting energy expenditure.
- The indicators of malnutrition in HIV-infected pregnant women are the same as in the non-infected pregnant women.

3. Nutritional Requirements of Pregnant Women

- The physiological changes that occur during pregnancy require extra nutrients for adequate gestational weight gain in order to support the growth and development of the fetus.
- **Energy requirements:**
  - An additional 300 kcal per day
  - Three meals and one snack
Nutritional Recommendations for Pregnant Women

- Weight gain: 12–16 kg
- Daily additional energy intake: One extra meal each day
- Diversified diet: fruits, vegetables, cereals, grains, meat, and fish
- Iron and folic acid supplementation: 60 mg of iron and 400 mcg of folic acid every day
- Daily consumption of iodized salt
- Prevention and treatment of malaria
- Provide presumptive hookworm treatment

Nutritional Care for HIV-Positive Women

Goals:

- Maintaining or increasing weight – Encourage diversified diet
- Preventing food-borne illnesses – Ensure that food and water are not contaminated and that storage and handling are safe
- Referring for appropriate HIV care and treatment
- Promptly treating opportunistic infections and managing the symptoms that affect food intake

Nutritional Requirements of HIV-Positive Women

Special considerations for HIV+ women:

- Increased energy requirements:
  - For asymptomatic: Increase energy requirements by 10% ➔ At least 3 meals and 2 snacks every day
  - For symptomatic: Increase energy intake by about 20% to 30% ➔ At least 4 meals and 2 snacks every day

Nutritional Care for HIV-Positive Women (cont.)

- Food safety:
  - Drinking water
  - Handwashing
  - Cooking and storing food
- Management of AIDS-related symptoms – Management of food/nutrition and drug interactions:
  - Maintain food intake
  - Eat and drink more to replace nutrients lost
- Psycho-social support
4. Key Actions for Health Workers

1. Assess the nutritional status of all pregnant women
2. Treat – Educate and provide nutrition counseling
3. Carry out follow-up counseling sessions

Nutritional Assessment

Components:
- Physical assessment: Steady weight gain during pregnancy
- Dietary assessment: Foods regularly consumed and frequency of meals, foods available and affordable, food intolerance and aversions to related symptoms, hygiene and food preparation and handling practices, vitamin and mineral supplements, and alternative practices
- Medication profile: Medication and supplementation she is taking
- Psychosocial

2. Education – Counseling

The health worker should always:
- Congratulate the pregnant woman for the positive actions/practices that she is already implementing.
- Propose options that are acceptable, affordable, and feasible for the woman.
- Encourage the pregnant woman to try new options that could help improve her nutritional status. The health worker should highlight the benefits the pregnant woman should expect when she implements the recommended actions.

Education – Counseling (cont.)

Counsel on (this applies to all women):
- Increasing food intake and frequency of meals
- Reducing workload
- Taking iron and folic acid tablets, and taking the full dose
- Promoting consumption of foods that enhance iron absorption
- Managing side effects that are diet-related
- Diversifying diet
- Providing presumptive hookworm treatment, starting the second trimester
- Preventing and treating malaria
Education – Counseling (cont.)

For HIV-positive women:
- If symptomatic and wasting:
  - Screen for causes and treat as needed
  - Counsel on increased food consumption
  - Refer for ARV treatment and family food assistance as needed
- If symptomatic and not wasting, counsel on:
  - Dietary management of complications such as diarrhea, vomiting, anorexia and thrush
  - Dietary management of food and drug interactions
- If asymptomatic, counsel on:
  - Increasing food intake
  - Hygiene and food safety
  - Providing psycho-social support and referral to community support groups

Education – Counseling (cont.)

- Nutritional care for malnourished pregnant women
  - If Anemic: treat anemia.
- Messages for the pregnant woman:
  - Take 120 mg iron + 400 mcg folic acid every day for 3 months. Drink orange, pineapple or citrus juice while taking iron and folic acid. Restrict consumption of tea, coffee and cocoa.

Nutritional messages for malnourished pregnant women:
- Eat more than three meals and one extra snack per day
- Rest more

3. Follow-Up Counseling Session

- Monitor the pregnant woman’s weight gain and counsel accordingly
- Monitor adherence and compliance to iron and folic acid intake
- Research and treat micronutrient deficiencies
- Follow up on the management of symptoms, food/nutrition and drug interactions affecting food intake and nutrient absorption for the HIV-positive women
Breastfeeding

- Exclusive breastfeeding should be encouraged among all women regardless of HIV status
- For HIV-free survival of infants, all women for whom replacement feeding is not acceptable, feasible, affordable, sustainable and safe (AFASS) should be encouraged to exclusively breastfeed for 6 months
- A woman should be supported in her infant feeding decision; the choice is hers

1. Why is nutrition important for lactating women?

1. Lactation places high demands on maternal stores of energy, protein and other nutrients
2. Maternal micronutrient malnutrition can negatively affect breast milk composition:
   - Inadequate maternal intake of water-soluble vitamins can affect breast milk concentration

Special consideration for HIV-positive women:
- Little is known about the effect of breastfeeding on the health and nutrition of HIV-positive women
- Multivitamin supplementation may delay the progression of HIV disease
2. Indicators of Maternal Nutritional Status

Indicators of good nutritional status:
- Hemoglobin level ≥ 12 g/dL
- Absence of clinical signs of micronutrient deficiencies

3. Nutritional Requirements of Lactating Women

- Requirements for energy and water-soluble vitamin are higher during lactation than during pregnancy and are proportional to the intensity and duration of breastfeeding
  - Energy requirements:
    - An additional 500 kcal per day
    - 4 meals per day

3. Nutritional Requirements of Lactating Women (cont.)

- Protein requirements:
  - An extra serving of protein food such as meat, fish, poultry, beans or lentils each day
- Micronutrient requirements:
  - WHO recommends giving breastfeeding women a high dose of vitamin A (200,000 IU) within 6 weeks after delivery to increase breast milk content of vitamin A

3. Nutritional Requirements of Lactating Women (cont.)

- Special considerations for HIV-infected lactating women are the same as for HIV-positive pregnant women
  - Energy requirements:
    - If asymptomatic: Increase energy intake by 10% ➔ 4 meals and one snack
    - If symptomatic: Increase energy intake by about 20% to 30% ➔ 4 meals and 2 or 3 snacks
    - Consumption of a diversified diet to meet the micronutrients needs
Nutritional Care for HIV-Positive Lactating Women

- Food safety, dietary management of AIDS-related symptoms, dietary management of food and nutrition and drug interactions, and psycho-social support are similar to those of HIV-infected pregnant women

4. Key Actions for Health Workers

- Key actions that health workers take to enhance the nutritional status of breastfeeding women are similar to those for pregnant women
- The health worker will adapt the content of the assessment and counseling to the situation of the breastfeeding woman

References


References (cont.)

References (cont.)


SESSION TOPIC TIME
Performance and Quality Improvement 120 min

SESSION OBJECTIVES

*By the end of this session, participants will be able to:*
- Define the Standards-Based Management and Recognition (SBM-R) model
- Describe the four steps of the SBM-R model
- Practice the use of the tool: standards and identification of gaps
- Practice identification of interventions and action plan

<table>
<thead>
<tr>
<th>Methods and Activities</th>
<th>Materials/Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illustrated presentation/discussion: A performance and quality improvement approach (30 min)</td>
<td></td>
</tr>
</tbody>
</table>
- Use questions and discussion throughout presentation as indicated on slides.
- Respond to questions as they arise during presentation.
- Be sure to cover the following topical areas:
  - Define “Standards-Based Management and Recognition (SBM-R)”
  - Steps of SBM-R
  - Setting performance standards
  - Tools for assessing performance
  - Implementation standards cycle
  - Defining “gaps”
  - Designing interventions
  - Measuring progress
  - Showing results
  - Ways to provide recognition
| Boxlight projector
- PowerPoint presentation
- Overhead projector with transparencies (Handouts of presentations if no electricity) |

Include case study/exercise described on slide.
KNOWLEDGE ASSESSMENT: PERFORMANCE AND QUALITY IMPROVEMENT

Instructions: Write the letter of the single best answer to each question in the blank next to the corresponding number on the attached answer sheet.

1. Defining standards for SBM-R includes:
   a. National policies/priorities
   b. Service delivery guidelines
   c. Provider inputs
   d. Client preferences
   e. a), b) and c)
   f. All of the above

2. What factors may affect performance?
   a. Knowledge, skills, capability
   b. Resources, tools, capacity
   c. Motivation
   d. All of the above

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

3. The final step in the SBM-R process is measuring the results of implementation. ______

4. The same tools are used for external evaluation as were used by local staff for self-evaluation. ______

5. Although material recognition is effective, social recognition has been proven not to be effective. ______
Performance and Quality Improvement

Best Practices in Maternal and Newborn Care

Objectives

By the end of the session, the learner will be able to:

- Define the Standards-Based Management and Recognition (SBM-R) model
- Describe the four steps of the SBM-R model
- Practice the use of the tool: standards and identification of gaps
- Practice identification of interventions and action plan

What is Standards-Based Management and Recognition (SBM-R)?

- Practical management approach for improving performance and quality of health services
- Based on use of operational, observable performance standards for on-site assessment
- Must be tied to reward or incentive program when standards are accomplished
- The whole team needs to be involved (not only clinicians or administrators)
- Consists of four basic steps

The Four Steps of SBM-R

1. Set Standards
2. Implement Standards
3. Measure Progress
4. Recognize Achievements
STEP 1: Setting Standards
Desired Performance

Set Standards
1

Question ??
How would you define/set clinical standards in a certain area?

How to Define Desired Performance: Standards

- Client Preferences
- Provider Inputs
- Service Delivery Guidelines
- National Policies/Priorities

Tool of Performance Standards

Performance Standards

The standards tell providers not only

WHAT TO DO

but also

HOW TO DO IT
Performance Assessment Tool
(sample from Tanzania tool for FANC)

Session 1: Focused Antenatal Care (FANC)

<table>
<thead>
<tr>
<th>Standard</th>
<th>Verification Criteria</th>
<th>Y, N, NA</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The provider conducts a routine rapid assessment of pregnant women</td>
<td>Observe in the reception area or waiting room if the person that receives the pregnant woman: Asks if she has or has had:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Vaginal bleeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Headache or visual changes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Breathing difficulty</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Severe abdominal pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Fever</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Immediately notifies the health provider if any of these conditions is present</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Filling Out the Tool

- Methods used to collect the information: structured direct observation, review of service and administrative records and documents, and interviews
- Immediately register the information collected
- Register “Yes”, “No” or “Not Applicable” in the corresponding column
- Write down all pertinent comments, in a clear and concise fashion, highlighting issues and possible causes

Summary Form of Assessment Tool
(sample from the Tanzania Tool for FANC)

<table>
<thead>
<tr>
<th>SECTIONS</th>
<th>STANDARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focused Antenatal Care</td>
<td>19</td>
</tr>
<tr>
<td>Information, Education and Communication (IEC)</td>
<td>4</td>
</tr>
<tr>
<td>Infection Prevention</td>
<td>5</td>
</tr>
<tr>
<td>Management Systems</td>
<td>9</td>
</tr>
<tr>
<td>Human, Pharmacy and Laboratory resources</td>
<td>9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>46</td>
</tr>
</tbody>
</table>
Step 2: Implementing Standards
Measurement of Actual Performance

| Set Standards 1 | Implement Standards 2 |

Implementation Standards Cycle

- Desired performance
- Actual performance
- Gap
- Cause analysis
- Intervention Identification & Implementation

Baseline Assessment

- Determines actual level of performance using the performance assessment tool
- Establishes actual performance in percentage terms by area and total
- Helps to identify performance gaps
- Once gaps are identified, then identify their causes

Initial Identification of Gaps

Identify gaps by marking “N” for:
- Practices not performed at all
- Practices performed incorrectly or incompletely

In the comments column:
- If possible, summarize potential causes why not done correctly
- If there is one or more “N,” the standard is not accomplished
Implementation Cycle

Desired performance → Gap → Cause analysis → Intervention identification & implementation → Actual performance

Question ??

- What might be some causes of “gaps”?
- What are some factors that might affect performance?

Why Gaps? Factors of Performance

Know how to do (Capability) → Knowledge, skills, information
Be enabled to do (Opportunity) → Resources, tools, capacity
Want to do (Motivation) → Inner drive, incentives

Causes and Intervention Design

MOTIVATION
- Resources, Capacity
- Knowledge, Skills, Information

INCENTIVES
- Strengthening of Management Systems, Provision of Resources
- Training, Communication

Types of Causes ↔ Appropriate Interventions
Interventions Can Be...

- ...Rapid interventions
- ...Interventions based on local resources
- ...Interventions that require external support

Remember that...

- ...There are factors that are under our control and there are factors that are outside of our control (resources, technical expertise, policies)
- ...We can begin the changes by addressing the factors that are under our control and produce rapid results
- ...We need to identify the sources of external assistance for the factors that are outside of our control

Step Three: Measure Progress

1. Set Standards
2. Implement Standards
3. Measure Progress

Case Study: A Performance Gap

- The clinical protocols/standards require that AMTSL be used at each birth
- You find that AMTSL is never being used
- You determine that all service providers know how to perform AMTSL, but no oxytocin nor ergometrine is available in the delivery area
- What is the Desired Performance, Actual Performance, Gap, (probable) Cause, Proposed Intervention?
Case Study

SBM-R Exercise:
- Desired performance: AMTSL every birth
- Actual performance: AMTSL not performed
- GAP: No AMTSL
- Cause: No uterotonic
- Intervention: Meet with administrator with request to order oxytocin and keep it stocked in delivery area

Steps to Measure Progress

Using the same tool and process:
- Measure progress (internal monitoring) after 2 or 3 months of interventions
- External evaluation (regional and central MOH) for official recognition when standards have been accomplished

Showing Results – by Facility
One Hospital in Guatemala

Showing Results – by Facilities
Seven Hospitals in Malawi
Best Practices in Maternal and Newborn Care
Learning Resource Package

Optional Module: Performance and Quality Improvement Handouts - 8
Step Four: Recognize and Reward Achievements

- Set Standards
- Implement Standards
- Recognize Achievements
- Measure Progress

Ways to Provide Recognition

- Feedback
- Social recognition
- Material recognition

Recognizing the Team Honduras

Conferred by the Ministry of Health to Mzuzu Central Hospital in recognition of the achievement of standards of excellence in Infection Prevention practices Year 2004

Secretary for Health
Summary

- Four-step process
- Not as complicated as it may sound
- Puts the power in the hands of local providers and managers
- Evidence-based standards
- Requires multiple sources of supervision and support

References


APPENDIX A

INTERNATIONAL CONFEDERATION OF MIDWIVES
CORE COMPETENCIES FOR MIDWIFERY
EDUCATION AND PRACTICE

GENERIC KNOWLEDGE, SKILLS AND BEHAVIOURS FROM THE SOCIAL SCIENCES, PUBLIC HEALTH AND THE HEALTH PROFESSIONS

Competency #1: Midwives have the requisite knowledge and skills from the social sciences, public health and ethics that form the basis of high quality, culturally relevant, appropriate care for women, newborn and childbearing families.

Basic Knowledge and Skills:
1. Respect for local culture (customs).
2. Traditional and modern routine health practices (beneficial and harmful).
3. Resources for alarm and transport (emergency care).
4. Direct and indirect causes of maternal and neonatal mortality and morbidity in the local community.
5. Advocacy and empowerment strategies for women.
8. Strategies for advocating with women for a variety of safe birth settings.
9. Knowledge of the community - its state of health including water supply, housing, environmental hazards, food, common threats to health.
10. Indications and procedures for adult and newborn/infant cardiopulmonary resuscitation.
11. Ability to assemble, use and maintain equipment and supplies appropriate to setting of practice.

Additional Knowledge and Skills:
12. Principles of epidemiology, sanitation, community diagnosis and vital statistics or records
13. National and local health infrastructures; how to access needed resources for midwifery care.
15. National immunisation programs (provision of same or knowledge of how to assist community members to access to immunisation services)
**Professional Behaviours - The midwife:**

1. Is responsible and accountable for clinical decisions.
2. Maintains knowledge and skills in order to remain current in practice.
3. Uses universal/standard precautions, infection control strategies and clean technique.
4. Uses appropriate consultation and referral during care.
5. Is non-judgmental and culturally respectful.
6. Works in partnership with women and supports them in making informed choices about their health.
7. Uses appropriate communication skills.
8. Works collaboratively with other health workers to improve the delivery of services to women and families.

**PRE-PREGNANCY CARE AND FAMILY PLANNING METHODS**

**Competency #2:** Midwives provide high quality, culturally sensitive health education and services to all in the community in order to promote healthy family life, planned pregnancies and positive parenting.

**Basic Knowledge of:**

1. Growth and development related to sexuality, sexual development and sexual activity.
2. Female and male anatomy and physiology related to conception and reproduction.
3. Cultural norms and practices surrounding sexuality, sexual practices and childbearing.
4. Components of a health history, family history and relevant genetic history.
5. Physical examination content and investigative laboratory studies that evaluate potential for a healthy pregnancy.
6. Health education content targeted to reproductive health, sexually transmitted diseases (STDs), HIV/AIDS and child survival.
7. Natural methods for child spacing and other locally available and culturally acceptable methods of family planning.
8. Barrier, steroidal, mechanical, chemical and surgical methods of contraception and indications for use.
9. Counselling methods for women needing to make decisions about methods of family planning.
10. Signs and symptoms of urinary tract infection and common sexually transmitted diseases in the area.
Additional Knowledge of:
1. Factors involved in decisions relating to unplanned or unwanted pregnancies.
2. Indicators of common acute and chronic disease conditions specific to a geographic area of the world, and referral process for further testing/treatment.
3. Indicators of and methods of counselling/referral for dysfunctional interpersonal relationships including sexual problems, domestic violence, emotional abuse and physical neglect.

Basic Skills:
1. Take a comprehensive history.
2. Perform a physical examination focused on the presenting condition of the woman.
3. Order and/or perform and interpret common laboratory studies such as haematocrit, urinalysis or microscopy.
4. Use health education and basic counselling skills appropriately.
5. Provide locally available and culturally acceptable methods of family planning.
6. Record findings, including what was done and what needs follow-up.

Additional Skills:
1. Use the microscope.
2. Provide all available methods of barrier, steroidal, mechanical, and chemical methods of contraception.
3. Take or order cervical cytology smear (Pap test)

CARE AND COUNSELLING DURING PREGNANCY

Competency #3: Midwives provide high quality antenatal care to maximise the health during pregnancy and that includes early detection and treatment or referral of selected complications.

Basic Knowledge of:
1. Anatomy and physiology of the human body.
2. Menstrual cycle and process of conception.
4. How to confirm a pregnancy.
5. Diagnosis of an ectopic pregnancy and multiple fetuses.
6. Dating pregnancy by menstrual history, size of uterus and/or fundal growth patterns.
7. Components of a health history.
8. Components of a focused physical examination for antenatal visits.
9. Normal findings [results] of basic screening laboratory studies defined by need of area of the world; eg. iron levels, urine test for sugar, protein, acetone, bacteria.


11. Normal psychological changes in pregnancy and impact of pregnancy on the family.

12. Safe, locally available herbal/non-pharmacological preparations for the relief of common discomforts of pregnancy.


14. Nutritional requirements of the pregnant woman and fetus.

15. Basic fetal growth and development.

16. Education needs regarding normal body changes during pregnancy, relief of common discomforts, hygiene, sexuality, nutrition, work inside and outside the home.

17. Preparation for labour, birth and parenting.

18. Preparation of the home/family for the newborn.

19. Indicators of the onset of labour.

20. How to explain and support breastfeeding.

21. Techniques for increasing relaxation and pain relief measures available for labour.

22. Effects of prescribed medications, street drugs, traditional medicines and over-the-counter drugs on pregnancy and the fetus.

23. Effects of smoking, alcohol use and illicit drug use on the pregnant woman and fetus.

24. Signs and symptoms of conditions that are life-threatening to the pregnant woman; eg. pre-eclampsia, vaginal bleeding, premature labour, severe anaemia.

Additional Knowledge of:

1. Signs, symptoms and indications for referral of selected complications and conditions of pregnancy: eg. asthma, HIV infection, diabetes, cardiac conditions, post-dates pregnancy.

2. Effects of above named chronic and acute conditions on pregnancy and the fetus.

Basic Skills:

1. Take an initial and ongoing history each antenatal visit.

2. Perform a physical examination and explain findings to woman.

3. Take and assess maternal vital signs including temperature, blood pressure, pulse.


5. Perform a complete abdominal assessment including measuring fundal height, position, lie and descent of fetus.

7. Listen to the fetal heart rate and palpate uterus for fetal activity pattern.
8. Perform a pelvic examination, including sizing the uterus and determining the adequacy of the bony structures.
9. Calculate the estimated date of delivery.
10. Educate women and families about danger signs and when/how to contact the midwife.
11. Teach and/or demonstrate measures to decrease common discomforts of pregnancy.
12. Provide guidance and basic preparation for labour, birth and parenting.
13. Identify variations from normal during the course of the pregnancy and institute appropriate interventions for:
   a. low and/or inadequate maternal nutrition
   b. inadequate fetal growth
   c. elevated blood pressure, proteinuria, presence of significant oedema, severe headaches, visual changes, epigastric pain associated with elevated blood pressure
   d. vaginal bleeding
   e. multiple gestation, abnormal lie at term
   f. intrauterine fetal death
   g. rupture of membranes prior to term
14. Perform basic life saving skills competently.
15. Record findings including what was done and what needs follow-up.

**Additional Skills:**
1. Counsel women about health habits; eg. nutrition, exercise, safety, stopping smoking.
2. Perform clinical pelvimetry [evaluation of bony pelvis].
3. Monitor fetal heart rate with doppler.
4. Identify and refer variations from normal during the course of the pregnancy, such as:
   a. small for dates [light]/large for dates [heavy] fetus
   b. suspected polyhydramnios, diabetes, fetal anomaly (eg. oliguria)
   c. abnormal laboratory results
   d. infections such as sexually transmitted diseases (STDs), vaginitis, urinary tract, upper respiratory
   e. fetal assessment in the post-term pregnancy
5. Treat and/or collaboratively manage above variations from normal based upon local standards and available resources.
6. Perform external version of breech presentation.
CARE DURING LABOUR AND BIRTH

Competency #4: Midwives provide high quality, culturally sensitive care during labour, conduct a clean and safe delivery, and handle selected emergency situations to maximise the health of women and their newborn.

Basic Knowledge of:
1. Physiology of labour.
3. Psychological and cultural aspects of labour and birth.
4. Indicators that labour is beginning.
5. Normal progression of labour and how to use the partograph or similar tool.
7. Measures to assess maternal well-being in labour.
10. Transition of newborn to extra-uterine life.
11. Physical care of the newborn - breathing, warmth, feeding.
12. Promotion of skin-to-skin contact of the newborn with mother when appropriate.
13. Ways to support and promote uninterrupted [exclusive] breastfeeding.
14. Physiological management of the 3rd stage of labour.
15. Indications for emergency measures: eg. retained placenta, shoulder dystocia, atonic uterine bleeding, neonatal asphyxia.
17. Indicators of complications in labour: bleeding, labour arrest, malpresentation, eclampsia, maternal distress, fetal distress, infection, prolapsed cord.
18. Principles of active management of 3rd stage of labour.

Basic Skills:
1. Take a specific history and maternal vital signs in labour.
2. Perform a screening physical examination.
3. Do a complete abdominal assessment for fetal position and descent.
4. Time and assess the effectiveness of uterine contractions.
5. Perform a complete and accurate pelvic examination for dilation, descent, presenting part, position, status of membranes, and adequacy of pelvis for baby.
6. Follow progress of labour using the partograph or similar tool for recording.
7. Provide psychological support for woman and family.
8. Provide adequate hydration, nutrition and comfort measures during labour.
10. Promptly identify abnormal labour patterns with appropriate and timely intervention and/or referral.
11. Perform appropriate hand manoeuvres for a vertex delivery.
12. Manage a cord around the baby's neck at delivery.
13. Cut an episiotomy if needed.
14. Repair an episiotomy if needed.
15. Support physiological management of the 3rd stage of labour.
16. Conduct active management of the 3rd stage of labour including:
   a. Administration of oxytocic
   b. Early cord clamping and cutting
   c. Controlled cord traction
17. Guard the uterus from inversion during 3rd stage of labour.
18. Inspect the placenta and membranes for completeness.
20. Inspect the vagina and cervix for lacerations.
22. Manage postpartum haemorrhage.
23. Provide a safe environment for mother and infant to promote attachment.
24. Initiate breastfeeding as soon as possible after birth and support exclusive breastfeeding.
25. Perform a screening physical examination of the newborn.
26. Record findings including what was done and what needs follow-up.

Additional Skills:
1. Perform appropriate hand manoeuvres for face and breech deliveries.
2. Inject local anaesthesia.
3. Apply vacuum extraction or forceps.
4. Manage malpresentation, shoulder dystocia, fetal distress initially.
5. Identify and manage a prolapsed cord.
7. Identify and repair cervical lacerations.
8. Perform internal bimanual compression of the uterus to control bleeding.
9. Insert intravenous line, draw bloods, perform haematocrit and haemoglobin testing.
10. Prescribe and/or administer pharmacological methods of pain relief when needed.
11. Administer oxytocics appropriately for labour induction or augmentation and treatment of postpartum bleeding.
12. Transfer woman for additional/emergency care in a timely manner.

POSTNATAL CARE OF WOMEN

Competency #5: Midwives provide comprehensive, high quality, culturally sensitive postnatal care for women.

Basic Knowledge of:
1. Normal process of involution and healing following delivery [including after an abortion].
2. Process of lactation and common variations including engorgement, lack of milk supply, etc.
3. Maternal nutrition, rest, activity and physiological needs (eg. bladder).
4. Infant nutritional needs.
5. Parent-infant bonding and attachment; eg. how to promote positive relationships.
6. Indicators of sub-involution eg. persistent uterine bleeding, infection.
8. Signs and symptoms of life threatening conditions; eg. persistent vaginal bleeding, urinary retention, incontinence of faeces, postpartum pre-eclampsia.

Additional Knowledge of:
1. Indicators of selected complications in the postnatal period: eg. persistent anaemia, haematoma, embolism, mastitis, depression, thrombophlebitis.
2. Care and counselling needs during and after abortion.
3. Signs and symptoms of abortion complications.

Basic Skills:
1. Take a selective history, including details of pregnancy, labour and birth.
2. Perform a focused physical examination of the mother.
3. Assess for uterine involution and healing of lacerations/repairs.
4. Initiate and support uninterrupted [exclusive] breastfeeding.
5. Educate mother on care of self and infant after delivery including rest and nutrition.
6. Identify haematoma and refer for care as appropriate.
7. Identify maternal infection, treat or refer for treatment as appropriate.
8. Record findings including what was done and what needs follow-up.
Additional Skills:
1. Counsel woman/family on sexuality and family planning post delivery.
2. Counsel and support woman who is post-abortion.
3. Evacuate a haematoma.
4. Provide appropriate antibiotic treatment for infection.
5. Refer for selected complications.

NEWBORN CARE (up to 2 months of age)

Competency #6: Midwives provide high quality, comprehensive care for the essentially healthy infant from birth to two months of age.

Basic Knowledge of:
1. Newborn adaptation to extra-uterine life.
2. Basic needs of newborn: airway, warmth, nutrition, bonding.
3. Elements of assessment of the immediate condition of newborn; eg. APGAR scoring system for breathing, heart rate, reflexes, muscle tone and colour.
4. Basic newborn appearance and behaviours.
5. Normal newborn and infant growth and development.
6. Selected variations in the normal newborn; eg. caput, moulding, mongolian spots, haemangiomas, hypoglycaemia, hypothermia, dehydration, infection.
7. Elements of health promotion and prevention of disease in newborn and infants.
8. Immunisation needs, risks and benefits for the infant up to 2 months of age.

Additional Knowledge of:
1. Selected newborn complications, eg. jaundice, haematoma, adverse moulding of the fetal skull, cerebral irritation, non-accidental injuries, causes of sudden infant death.
2. Normal growth and development of the preterm infant up to 2 months of age.

Basic Skills:
1. Clear airway to maintain respirations.
2. Maintain warmth but avoid overheating.
3. Assess the immediate condition of the newborn; eg. APGAR scoring or other assessment method.
4. Perform a screening physical examination of the newborn for conditions incompatible with life.
5. Position the infant for breastfeeding.
6. Educate parents about danger signs and when to bring the infant for care.
7. Begin emergency measures for respiratory distress (newborn resuscitation), hypothermia, hypoglycaemia, cardiac arrest.
8. Transfer newborn to emergency care facility when available.
9. Record findings, including what was done and what needs follow-up.

Additional Skills:
1. Perform a gestational age assessment
2. Educate parents about normal growth and development, child care.
3. Assist parents to access community resources available to the family.
4. Support parents during grieving process for congenital birth defects, loss of pregnancy, or neonatal death.
5. Support parents during transport/transfer of newborn.

Between 1995 and 1999 a modified Delphi Technique was carried out for seven rounds to establish the Provisional Essential Competencies for Basic Midwifery Practice. As agreed by the International Council (the Confederation’s governing body) in 1999, the competencies were field-tested by 17 ICM member associations throughout 2001. The extensive field testing was undertaken by 1,271 practising midwives, 77 educator groups (total of 312 educators), and 79 senior level midwifery student groups (total of 333 individuals) from 22 countries; and 25 regulators from 20 countries. A total of 214 individual competency statements within six domains were presented for consideration and comment. Almost all of the competencies were supported by a great majority of the persons/groups involved in the testing, with many receiving universal support. In April 2002 the ICM International Council discussed and adopted the Essential Competencies for Basic Midwifery Practice, therewith establishing it as an official ICM document.
APPENDIX B

ESSENTIAL COMPETENCIES FOR THE SKILLED BIRTH ATTENDANT IN THE AFRICAN REGION

GUIDING PRINCIPLES

The consensus on essential competencies for the skilled birth attendant in the African Region is guided by the following principles:

Human rights approach – The right to health and life is a basic human right and women and the newborns have a right to universal access to appropriate quality care.

Public health approach – Essential maternal and newborn health care services should be an integral component of the minimum package services at all levels of the health care delivery system.

A continuum of care – All women should receive appropriate quality care before and during pregnancy, childbirth and postpartum period.

The inseparable dyad of mother and newborn – Interventions for maternal and newborn health should be provided as a package at all levels of the health care service delivery system.

Integration with other relevant programmes – Due importance should be accorded to the need for the prevention and management of indirect causes of maternal and newborn morbidity and mortality such as Malaria and HIV/AIDS.

COMPETENCY IN SOCIAL, EPIDEMIOLOGIC AND CULTURAL CONTEXT OF MATERNAL AND NEWBORN HEALTH

The skilled attendant should have knowledge about social determinants and epidemiological context of maternal and newborn health and ethics that form the basis of appropriate care.

Knowledge is required on:

1. Demography and epidemiology of the local community, including vital statistics of births and deaths, and indicators for health and disease.

2. Direct and indirect causes of maternal, perinatal and neonatal mortality and morbidity, and strategies for reducing them including the advantages of care by skilled birth attendant during pregnancy, childbirth and the postnatal/postpartum period

3. Social determinants for health such as income, water, sanitation, housing, adequacy of food supplies, level of literacy and education, environmental hazards and access to health facilities, local culture, customs and beliefs, including religious beliefs, gender roles and traditional practices.

4. National and local health services including policies, plans and legal framework that regulate provision of and access to essential health package for maternal and child health care at each level in the context of the continuum of care.

5. Community-based primary care, communication and counselling techniques to enhance health promotion and disease prevention.

6. Referral system to higher health facility levels including transport mechanisms.

7. The role and function of other relevant national programmes such as HIV, Malaria and Immunization.

8. Ethical principles that promote equitable access, respect of and inclusion of the patient in decision making.

9. Principles of good management including effective teamwork with other health care professionals.

**Essential skills:**

1. Compile a community health profile.

2. Practice in a responsible manner and is accountable for his/her clinical decisions and actions.

3. Recognise the signs and symptoms of complications and the need for consultation with other medical staff and/or referral and takes appropriate and timely action.

4. Behave in a courteous, respectful, on-judgemental and culturally appropriate manner with all clients, regardless of status, ethnic origin or creed.

5. Promote involvement of women to make informed choices about all aspects of their care and encourages them to take responsibility for their own health.

6. Use appropriate communication and counselling techniques and provide health education relevant for the local community and information about available health services.

7. Work in liaison with individuals, families and communities and other key stakeholders to promote and advocate for Safe Motherhood.

8. Organise his/her work to ensure collaboration with other health workers for effective team work in the provision of health services to women and their families and keep correct records.

**COMPETENCY IN PRE-PREGNANCY CARE AND FAMILY PLANNING**

The skilled attendant should provide high quality, culturally sensitive health education and family planning services in order to promote healthy family life, planned pregnancies and positive parenting.

**Knowledge of:**

1. Female and male anatomy and physiology related to sexuality, fertility and reproduction.

2. Cultural norms and practices surrounding sexuality, sexual practices and childbearing including FGM.

3. Relevant components of a health and family history.
4. Details of physical examination required and investigative laboratory studies that evaluate potential for a healthy pregnancy.

5. Health education content targeted at reproductive health, sexually transmitted diseases (STD's), HIV/AIDS, nutrition and promotion of general health and well-being.


7. Advantages and disadvantages of different methods of child spacing and family planning and details for their effective use.

8. Policies and legislation on family planning including factors involved in decision-making related to unplanned or unwanted pregnancies.


**Essential skills:**

1. Obtain a relevant and comprehensive history in a sensitive and friendly manner, assuring the woman of confidentiality.

2. Perform a general physical examination of the woman and identify, and appreciate the significance of, any abnormal findings.

3. Request and/or perform and interpret accurately common laboratory tests such as full blood picture, urinanalysis and microscopy.

4. Take a cervical smear correctly for cytology (Papanicolaou).

5. Correlate all data obtained from the history, physical examination and any laboratory tests and interpret the findings in preparation for giving appropriate information and care to the woman.

6. Record all findings from history, physical examination and tests as well as advice, counselling, treatment and recommendations for follow-up.

7. Provide a full range of family planning services including the insertion of an intrauterine contraceptive device and implants, provide post-exposure preventive treatment in accordance with the woman’s choice.

8. Record the contraceptive method provided and give appropriate advice and care for any adverse side effects and advice on follow-up.

9. Use health education and basic counselling skills appropriately when giving information and advice.
Knowledge of:

1. The biology of human reproduction, e.g., the neuro-hormonal regulation of human reproduction and foetal development.
2. Signs and symptoms of pregnancy including physiological changes and advice on the minor disorders which may result from some of them.
3. Examinations and tests for confirmation of pregnancy.
4. Dating pregnancy by menstrual history, size of uterus by palpation and ultrasound if available.
5. Medical complications and their effect on pregnancy, e.g., severe anaemia, diabetes, cardiac or respiratory conditions, essential hypertension, renal disease.
6. Taking a comprehensive and relevant history of the current pregnancy, the woman’s health, her obstetric history and her family health history.
7. Components of a general physical examination to assess the well-being of the mother including weight and blood pressure and the significance of the findings.
8. Components of a general physical examination to assess the well-being of the fetus including fundal height, fetal activity and heart rate and, in the latter weeks, the lie, presentation, position and descent of the fetus and the significance of the findings.
9. Screening tests in pregnancy, including the interpretation of findings, e.g. haemoglobin, urinanalysis for protein, tests for syphilis, e.g. rapid plasma reagin (RPR), HIV testing, screening for TB and laboratory tests for asymptomatic bacteriuria.
10. Nutritional requirements of the pregnant woman and her fetus.
11. Health education and counselling regarding hygiene, nutrition, sexuality including safer sex, risks of HIV and contraception, the dangers associated with smoking, alcohol and unprescribed drugs.
12. The importance of birth preparedness including place for birth, funds, transportation and social support
13. Infant feeding, including the advantages of exclusive breast feeding, and replacement feeding in the context of HIV.
14. Education of women and their families about danger signs during pregnancy and the need to seek immediate help from a skilled health worker.
15. Recognition and management of serious conditions in pregnancy which require immediate attention: e.g. pre-eclampsia and eclampsia, vaginal bleeding, preterm labour, preterm rupture of the membranes, severe anaemia, abortion, ectopic or multiple pregnancy, malpresentations at term, e.g. breech and shoulder.
16. Appropriate care for the HIV-positive pregnant woman and interventions to prevent mother-to-child transmission.


**Essential skills:**

1. Take an initial and ongoing history at each antenatal visit.
2. Calculate the estimated date of delivery from the date of the woman’s last menstrual period, if known; otherwise assess gestational age from onset of fetal movements and assessment of fundal height.
3. Perform a full general physical examination and explain the findings to the woman.
4. Assess maternal vital signs including temperature, blood pressure and pulse.
5. Perform and interpret screening tests in pregnancy, e.g., haemoglobin, urinanalysis for protein, tests for syphilis, HIV, screening for TB and asymptomatic bacteriuria.
6. Assess maternal nutrition and give appropriate advice on nutritional requirements in pregnancy and how to achieve them.
7. Perform an abdominal examination, including measurement of the fundal height and comparison with gestational age to assess fetal growth and stage of pregnancy; in the latter weeks of pregnancy, identify the lie, presentation, position and descent of fetus and auscultate the fetal heart.
8. Correlate all data obtained from the history, examination of the woman and results of any laboratory tests and interpret the findings in preparation for giving appropriate information, advice and care to the woman.
9. Educate and counsel women about health issues; e.g. nutrition, hygiene, exercise, dangers of smoking and taking unprescribed drugs, safer sex and risks of HIV.
11. Provide counselling, care, treatment and support for the HIV positive pregnant woman including measures to prevent mother-to-child transmission i.e., infant feeding options.
12. Educate women and their families about the need to seek immediate help from a skilled health worker if any of the following danger signs develop: severe headache, visual disturbances, epigastric pain, vaginal bleeding, abdominal pain associated with episodes of fainting, severe vomiting, preterm rupture of the membranes, fever, offensive or irritating vaginal discharge.
13. Diagnose complications and risk conditions in pregnancy for referral to more specialized care such as:
   - elevated blood pressure and proteinuria, and/or severe headaches, visual changes and epigastric pain associated with elevated blood pressure,
   - high fever,
   - heavy vaginal bleeding in early pregnancy,
any vaginal bleeding after 22 week,
abdominal pain associated with episodes of fainting in early pregnancy, with or without vaginal bleeding,
multi-fetal pregnancy,
malpresentation at term, e.g. breech, shoulder,
preterm rupture of the membranes,
suspected oligo- or polyhydramniosis,
intrauterine fetal death,
record findings of history, examinations, tests and give advice and instructions for follow-up.

COMPETENCY IN CARE DURING LABOUR AND BIRTH

The skilled attendant should provide high quality, culturally sensitive care during labour, conduct a clean, safe delivery, give immediate care to the newborn and manage emergencies effectively to prevent maternal and neonatal mortality and morbidity.

Knowledge of:

1. Onset, physiology and mechanisms of labour.
2. Anatomy of fetal skull, including main diameters and landmarks.
3. Cultural issues concerning labour and birth.
4. Assessment of progress in labour and use of the partograph.
5. Measures to assess fetal well-being in labour.
6. Measures to ensure maternal well-being in labour, hygiene and bladder care, hydration and nutrition, mobility and positions of the woman’s choice, emotional support, massage.
7. Universal precautions to prevent infections.
8. Diagnosis and management of the second stage of labour including delivery of the baby.
9. Indications and technique for making and repairing an episiotomy, including the technique for local anaesthesia of the perineum.
10. Immediate care of the newborn,
   - procedures for maintaining warmth,
   - clearing of airways and assessing breathing,
   - methods of resuscitation,
   - cord care,
   - early initiation of exclusive breastfeeding, or replacement feeding if the mother is HIV positive and that is her choice.
11. Use, action and indications of uterotonics.
12. Management of the third stage of labour including active management of the third stage of labour.
13. Reasons and method for examination and safe disposal of the placenta and membranes.
14. Technique for examination of the perineum, vulva and lower vagina for tears and grading of perineal tears.
15. Methods of suturing second degree perineal and lower vaginal tears.
16. Measures to assess the woman’s condition after birth
17. Complications in labour requiring emergency care and/or referral, e.g.,
   - intra-partum haemorrhage,
   - multi-fetal pregnancy
   - malpresentations,
   - fetal distress including the risk associated with premature rupture of membranes (PROM) and meconium-stained liquor,
   - cord prolapse,
   - prolonged or obstructed labour,
   - shoulder dystocia,
   - retained placenta,
   - postpartum haemorrhage,
   - severe vaginal and cervical tears,
   - serious infections.
18. Emergency management of PPH.
19. Use of magnesium-sulphate for management of eclampsia.
20. Operative delivery, especially vacuum extraction (VE).
22. PMTCT including HIV screening in women with unknown HIV status.
23. Care, treatment and support in labour and birth for the HIV-positive woman and her newborn.

**Essential skills:**

1. Take full history of pregnancy and labour including the review of maternal pregnancy records.
2. perform a general physical examination to assess the woman’s condition.
3. Perform an abdominal examination to confirm the period of gestation, identify the lie, presentation, position and descent of the fetus, and auscultate the fetal heart.
4. Assess the frequency, duration and strength of uterine contractions.

5. Make a vaginal examination to determine cervical effacement and dilatation, confirm whether or not the membranes have ruptured, identify the presenting part and position of the fetus, the moulding, the station and level of the head and the adequacy of the pelvis for the passage of the fetus.

6. Accurately record the progress of labour using the partograph.

7. Monitor maternal and fetal condition regularly throughout labour, identifying deviations from normal and taking timely, appropriate action.

8. Provide emotional support for the woman and her family, ensuring that the woman has a companion of her choice to stay with her throughout labour, and keep her fully informed of progress, involving her in all decisions related to her care.

9. Keep the woman in optimum condition during labour, maintaining adequate hydration and nutrition, ensuring that the bladder is emptied regularly, promoting high standards of hygiene to prevent infection and helping with methods of pain relief such as massage and enabling the woman to adopt the positions of her choice.

10. Recognise the signs and symptoms of the second stage of labour and provide constant care, observation and support, allowing non-directive pushing, providing support of the perineum and avoid interference with the normal mechanism of labour.

11. Use universal precautions to prevent infection.

12. Apply a local anaesthesia to the perineum before making an episiotomy, if indicated.

13. Make an episiotomy where indicated and repair it.

14. Provide immediate care for the newborn, including drying, clearing airways, ensuring that breathing is established, skin-to-skin contact with mother and covering to provide warmth.

15. Conduct correctly management of the third stage of labour including the active management of the third stage of labour, using uterotonics (for example oxytocin).

16. After delivery of the placenta and membranes, ensure that the uterus is well contracted by rubbing up a contraction and expelling clots, if necessary, and check that vaginal bleeding is minimal.

17. Examine the vulva, perineum and lower vagina for lacerations, repair second degree tears of the perineum, but refer women with third degree perineal tears and cervical tears to specialized care.

18. Estimate and record all blood loss as accurately as possible.

19. Examine the placenta and membranes for completeness and normality and dispose of them safely as appropriate.

20. Monitor the mother’s condition, ensuring that vital signs and vaginal bleeding are within normal limits and that the uterus remains well contracted.

21. Manage postpartum haemorrhage urgently, if it occurs, by massaging the uterus, administration of uterotonic (for example oxytocin) drug, emptying the bladder, establishing an intravenous infusion and, if still bleeding, aortic or bimanual compression and preparation for referral.
22. Perform urinary catheterisation using an aseptic technique to prevent the introduction of infection.

23. Monitor the condition of the newborn, ensuring that breathing and colour are normal, warmth is maintained and that there is no bleeding from the umbilical cord.

24. Resuscitate the asphyxiated newborn and give appropriate care before referral.

25. Keep mother and baby together to promote attachment and support early initiation (within one hour) of exclusive breastfeeding.

26. Record all details of the birth, care given to the mother and baby and advice about follow-up.

27. Provide HIV testing for women with unknown HIV-status.

28. Give appropriate care and support to the HIV-positive woman and the newborn including PMTCT interventions.

29. Refer women presenting with FGM stage III.

30. Diagnose and safely deliver breech presentation.

31. Manage cord presentation or prolapse correctly.

32. Infiltrate local anaesthetic.

33. Perform vacuum extraction when indicated.

34. Perform MVA to evacuate retained products of conception.

35. Manage shoulder dystocia correctly.

36. Perform manual removal of the placenta and membranes correctly.

37. Insert intravenous line when indicated, draw blood for tests.

38. Prescribe and administer certain drugs, e.g. magnesium sulphate, diazepam, antibiotics and analgesics.

39. Arrange for and undertake timely referral and transfer of women with serious complications to a higher level health facility, taking appropriate drugs and equipment and accompanying them on the journey in order to continue giving emergency care, as required.

**POSTPARTUM CARE OF WOMEN**

Competency 5: The skilled attendant should provide comprehensive, high quality, culturally sensitive postpartum care for women.

**Knowledge of:**

1. Physiological changes in the puerperium.

2. The physiology of lactation, the initiation and management of breastfeeding and the recognition and management of common problems which may occur.

3. Recognition, monitoring and management of the psychological and emotional changes, which may occur in the puerperium.
4. Parent-infant attachment and factors which promote and hinder it.

5. The risks of infection and measures taken to prevent infection in mother and newborn after childbirth.

6. Health education and counselling on self care, adequate sleep, rest, good nutrition, personal hygiene including perineal care and care of the newborn infant.

7. Procedure and reasons for postnatal examinations of the mother during the first 12–24 hours, within one week and at six weeks after the birth, or sooner if required.

8. Diagnosis and treatment of anaemia after childbirth.

9. Diagnosis, management and referral of complications e.g.,
   - infection and disorders of the reproductive and/or urinary tract,
   - breast infections,
   - thromboembolic disorders,
   - eclampsia,
   - secondary postpartum haemorrhage, and
   - psychiatric disorders.

10. The grief process following stillbirth or neonatal death, or the birth of an abnormal child, counselling, comforting and supporting the mother and her family.

11. Medical conditions which may complicate the puerperium, e.g. cardiac, lung and renal diseases, hypertensive disorders and diabetes.

12. Special support for adolescents, HIV positive women and living with violence, including rape.

13. Care, support and treatment for the HIV positive mother and her newborn including continuing monitoring and follow up of women on ARVs.

14. Family planning and birth spacing methods appropriate in the postpartum period.

**Essential skills:**

1. Take full history of pregnancy, birth and the earlier postpartum period, identifying factors which will influence the care and advice given.

2. Perform a systematic postpartum examination of the mother identifying any actual or potential problems.

3. Provide appropriate and timely treatment for any complications detected during the postpartum examination i.e., detection and treatment of anemia.

4. Facilitate and support the early initiation and maintenance of exclusive breastfeeding.

5. Use universal precautions for the prevention of infection to prevent the spread of infection after childbirth.

6. Educate and counsel the woman on care for herself and for her baby.
7. Facilitate psychosocial family and community based supportive measures.
8. Emergency treatment of uncomplicated PPH with MVA.
9. Emergency care of a woman during and after an eclamptic fit, including preparation for referral.
11. Counsel, comfort and support the mother and father if the baby is stillborn, born with abnormalities or dies in the neonatal period.
12. Provide care, support and treatment for the HIV positive woman.
13. Counsel the woman on family planning and safer sex and provide appropriate family planning services in accordance with the woman’s choice including information on advantages and disadvantages of the chosen method.
14. Record the contraceptive method provided and give appropriate advice and care for any adverse side effects and advice on follow-up.
15. Keep accurate records on postnatal care and make arrangements for follow-up or referral, as appropriate.

COMPETENCY IN POSTNATAL NEWBORN CARE

The skilled attendant should provide high quality postnatal care for the newborn.

Knowledge of:

1. Physiological changes at birth.
2. Assessment of the newborn using Apgar score.
4. Parent/infant attachment.
5. Procedure for examination of the newborn at birth and subsequently.
6. Infant feeding, both exclusive breastfeeding and replacement feeding.
7. Nutritional requirements of the infant.
8. Traditional practices as they relate to newborn care.
9. Essential elements of daily care of the newborn, e.g., warmth, skin care, care of the umbilical cord, observation for signs of infection, jaundice, frequency and character of stools, feeding and signs of thriving and failure to thrive.
11. Programme for immunisations and vaccinations during the first five years.
12. Common disorders of the newborn, e.g. skin rashes, minor vomiting, minor infections, minor feeding problems and physiological jaundice.
13. Serious disorders of the newborn, e.g., major infections, respiratory difficulties, cardiac conditions, congenital malformations, neonatal convulsions.
14. Low birthweight babies, e.g. preterm and small-for-gestational age.
17. Birth registration.
18. Follow-up of the newborn using correct records.
19. Management of the very low birthweight infant.
20. Monitoring, testing and follow up of newborns born to a HIV-positive mother.

**Essential skills:**

1. Apply aspiration of the airways when head is delivered if meconium stained liquor.
2. Clear airways at birth, to facilitate breathing.
3. Assess the condition of the newborn at birth.
4. Use bag and mask correctly to resuscitate the asphyxiated newborn.
5. Dry the newborn at birth, place in skin-to-skin contact on the mother’s abdomen or chest and cover to keep the baby warm. If skin-to-skin contact is not possible, place the baby on a clean, warm surface and wrap warmly.
6. Clamp and cut the umbilical cord, taking appropriate measures to prevent infection.
7. Label the newborn for correct identification.
8. Examine the newborn systematically from head to feet to detect any congenital malformations, birth injuries or signs of infection.
10. Assist the new mother to initiate exclusive breastfeeding within one hour.
11. Educate the mother and her family about all aspects of infant feeding, especially the importance of exclusive breast feeding for the first six months of life.
12. Teach and supervise the mother in making up feeds correctly and the technique of cup-feeding her baby, if replacement feeding is selected.
13. Teach the mother about the general care and hygiene of the baby, e.g. skin, eyes and cord to prevent infection.
14. Monitor the growth and development of the baby during the postnatal period.
15. Recognise minor and serious disorders in the newborn and treat appropriately, including arranging for referral, if necessary.
16. Give appropriate care including kangaroo mother care to the low birthweight baby, and arrange for referral if potentially serious complications arise, or very low birth weight.
17. Educate the parents about the signs of potentially serious conditions in the newborn and the need to seek immediate help from a skilled health worker.

18. Give immunisations correctly at the optimum time and advise the parents of any possible adverse effects and when to return for further immunisations.


20. Manage bereavement and loss in the event of neonatal death and prepare the dead neonate.

21. Care for baby born to an HIV positive mother e.g., administration of ARV and replacement feeding.

22. Emergency management of life-threatening conditions, e.g. establishing an intravenous infusion, the administration of appropriate drugs, monitoring the condition of the baby, and preparing the mother and newborn for referral.
APPENDIX C

INSTRUCTIONS FOR MAKING CLOTH MODELS¹

BABY, PLACENTA AND CORD

Materials Needed: Baby

1/3 yard light brown material (medium weight cotton or cotton/polyester)
Light brown sewing thread
Baby pattern
Polyester or polyester/cotton stuffing material
  (stuffing from a bed pillow works well)
Sewing needle or sewing machine
Sewing scissors
Dark brown or black permanent fine tip marker
Large metal snap (female side)
Straight pins

Materials Needed: Placenta and Cord

¼ yard red material (medium weight cotton or cotton/polyester or polyester)
¼ yard white material (medium weight cotton or cotton/polyester)
Placenta and cord pattern
Red sewing thread
White sewing thread
Sewing needle or sewing machine
Black permanent marker
Polyester or polyester/cotton stuffing material (stuffing from a bed pillow works well)
Large metal snap (male side)
Sewing scissors
Straight pins
Tweezers or artery forceps

Instructions for Baby

Place pattern on a double layer of light brown material (body, leg, and arm). Pin the pattern in place. Cut around pattern with a sharp sewing scissors. Unpin the pattern.

Place the arm and leg pattern again on the double layer of material (to make a second arm and leg). Pin the pattern into place, cut, and unpin. Place the two pieces of the body with the right sides together. Pin into place. Place marks where the arms will be inserted (see marks on the pattern). Stitch ½" (1.2 cm) from edge of material leaving open between the marks where the arms will be inserted and leaving open the bottom of the body where the legs will be inserted. Turn the body right side out and stuff.

¹ Patterns designed and developed by Annie Clark, CNM, American College of Nurse-Midwives. To make any of these models, double the size of the patterns given in this appendix. If a photocopier is available, enlarge the pattern by 200%.
Place the two pieces of one leg with the right sides together. Pin into place. Stitch ½" (1.2 cm) from edge of material leaving the top of the leg open. Remove pins. Turn right side out. Stuff the leg. Repeat with the other leg.

Place the two pieces of one arm with the right sides together. Pin into place. Stitch ½" (1.2 cm) from the edge of material leaving the top of the arm open. Remove pins. Turn right side out. Stuff the arm.

Take one arm and ease into the body (make sure the baby’s thumb is up). Turn the raw edges under. Pin in place. Top stitch the arm into place. Remove pins. Repeat with the other arm.

Take one leg and ease into the body. Turn the raw edges under. Pin in place. Take the other leg and ease into the body. Turn the raw edges under. Pin in place. Put additional stuffing into body, if needed. Pin the crotch closed. Top stitch legs into place and top stitch crotch closed.

Sew the female end of the snap in the middle of the body where the bellybutton would be.

**Instructions for Placenta and Cord**

Place placenta pattern on a double layer of the red material. Pin the pattern in place. Cut around pattern with a sharp sewing scissors. Unpin the pattern. Place the two right sides of the fabric together. Pin together about 1" (2.5 cm) from the edge. Sew the two pieces of material together 1/2" (1.2 cm) from the edge of the material. Leave a 2" (5 cm) space unsewn. Remove the pins. Turn the “placenta” right side out. Stuff with the stuffing material until about 1" (2.5 cm) thick. Turn the edges of the open 2" (5 cm) seam and stitch closed.

Fold over the white material. Place cord pattern with edge indicated on fold of white material. Pin pattern into place. Cut along the edge of the pattern. Unpin the pattern from the material. Fold the material so the two right sides of the fabric face each other. Pin 1 inch (2.5 cm) from the edge. Sew ½" (1 cm) from the edge of the material. Remove the pins. Turn the cord right side out. (Use the tweezers or artery forceps to help pull the material right side out.) Loosely stuff the cord using the tweezers or artery forceps. (Do not overstuff. The cord should be squeezable, not hard like a rope). Turn the raw edges at each end of the cord inward. Stitch one end of the cord closed. Sew the male side of the snap to this end of the cord. Sew the other end of the cord to the middle of the placenta.

On the fetal side of the placenta (the side the cord is sewn onto), draw arteries and veins using the permanent marker.

On the maternal side of the placenta, draw cotyledons.
UTERUS

Materials Needed: Uterus

¼ yard pink material (medium weight cotton or cotton/polyester)
26" (66 cm) white shoelace or ¼ " (0.5 cm) wide pink or white ribbon
Pink sewing thread
Small safety pin (if using ribbon instead of shoelace)
Straight pins
Uterus pattern
Polyester or polyester/cotton stuffing material
(stuffing from a bed pillow works well)
Sewing scissors
Sewing needle or sewing machine

Instructions

Place placenta pattern on a double layer of the pink material. Pin the pattern in place. Cut around pattern with a sharp sewing scissors. Unpin the pattern. Hold one piece of material so the wrong side of the material is facing you. Fold under ¼" (0.5 cm) of the straight edge (cervix) of the piece, and pin to hold. Stitch by hand or machine. Remove pins. Repeat with the other piece. Now place the two pieces of material with the right sides together. Pin to hold. Stitch ½" (1.2 cm) from the edge all the way around the uterus, but leave the straight edge (cervix) unstitched. Unpin. Now fold the straight edge under again 5/8" (1.5 cm), creating a casing, and pin to hold. Stitch ½ " (1.2 cm) from the folded edge leaving ½ “ (1.2 cm) unstitched. Insert the end of the shoelace through the opening and work it through and out the other end of the casing. Hold the end of the shoelace and slide the material along the shoelace until equal amounts of the shoelace are exposed from each side of the casing. (If using ribbon, attach a small safety pin to the end of the ribbon and work it through the casing in the same manner.) Turn the uterus right side out. Stuff the uterus until about 2" (5 cm) thick. Tie shoelaces or ribbon in a bow to secure.
PELVIS

Materials Needed
¾ yard white or beige material (medium weight cotton or cotton polyester)
Pelvis pattern
White or beige sewing thread
Beige embroidery thread-1 skein
Heavy 3" (8 cm) sewing needle with large eye
Polyester or polyester/cotton stuffing material
(stuffing from a bed pillow works well)
Aluminum soft drink can
Sewing needle or sewing machine
Straight pins
Sewing scissors
Pencil

Instructions
Place pelvis pattern on a double layer of white or beige material. Pin the pattern in place. Cut around pattern with a sharp sewing scissors. Unpin the pattern. Take the two pieces you have cut out and put them together so the right sides of the material are facing each other. Pin into place. Stitch ½" (1.2 cm) from edge of material leaving open between the marks at the spine where the stuffing will be inserted. Turn the pelvis right side out. On both sides of the pelvis, mark the pelvis with a pencil where the embroidery stitches will be placed according to the pattern. Cut a piece of aluminum from the pattern for the tailbone with the scissors. Slide the piece of aluminum inside the pelvis where the tailbone will be. Stuff the entire pelvis firmly with stuffing. Bring the two edges of the pubic bone together and stitch both front and back of pubic bone.

Finishing-Thread the heavy needle with the embroidery thread. Stitch along the iliac crest as indicated on the pattern. Use stitches ½" (1.2 cm) long and stitch from the front of the iliac crest to the back and then stitch forward again so your stitches fill in and make a solid line of stitching. Repeat with the other iliac crest.

Use the heavy needle with embroidery thread. Knot the end of the thread. Insert the needle through one of the pencil marks on the inside of the pelvis and come through the opposite mark on the outside of the pelvis. Pull tight. Insert the needle through the same mark on the outside of the pelvis to the inside of the pelvis. Repeat one more time inserting the needle through the same mark on the inside of the pelvis to the outside of the pelvis. Pull tight and secure with a knot. Cut the thread free being careful not to cut off the knot. Repeat this process for all of the pencil marks. When stitching the tailbone, insert needle through both the material and the aluminum piece inside.

Fold over the raw edges of the spine where the stuffing was inserted, pin together, and stitch closed. Remove pins.
INSTRUCTIONS FOR MAKING A BREAST MODEL

Materials Needed for One Model

Sewing needle
Sewing thread (color does not matter)
(2) Lower legs or upper legs of brown panty hose
2 large handfuls of polyester or polyester/cotton stuffing from a pillow
2 small plain rubber bands (not colored)
Black marker with permanent ink
Piece of white cotton cloth 152 cm long and 10 cm wide (a piece of sheet works well)

Instructions
1. Cut the panty and the toes off of a pair of pantyhose. Cut the two pieces from the legs in half so you have 4 tubes. (You will need 2 tubes).
2. Take a handful of stuffing and push it into the center of one of the pantyhose tubes. Repeat with a second tube. These will become the breasts.
3. Fold the excess of the pantyhose material so that it overlaps behind the “breast.” Take a few stitches with a needle and thread to hold the flaps down. Repeat with the second “breast.”
4. Pinch the front of the “breast” to form a nipple and bind with a small rubber band. Repeat with the second “breast.”
5. Take the piece of sheet and tie it around your chest. Make a mark on the cloth where you feel your own nipples beneath the cloth.
6. Remove the piece of sheet and sew the “breasts” on over each mark you made.
7. Color the nipple and make an areola with the black marker on each “breast.”
8. Tie the model on around your chest for teaching breastfeeding, breast exam, pregnancy, childbirth, or postpartum role plays.
INSTRUCTIONS FOR MAKING INFANT “BEANIES”

Materials Needed for One Beanie

A size D or 3 crochet hook
Baby or fingering weight yarn

Crocheting Pattern

Ribbing: Chain (ch) 8 stitches (sts); turn, single crochet (sc) into 2nd ch from hook and each st across. Ch 1, turn. Row 2: Sc into back loop only of each sc across. Ch 1, turn. Repeat (rep) row 2 until there are 24 redges. Fasten off and sew seam in ribbing to form a circle.

Attach yarn at seam and ch 3. Double crochet (dc) in end of each row of ribbing; slip stitch (sl st) to join, ch 3. Work 4 rounds (rnds) of dc joining rnds with sl st.

1st decrease (dec) Rnd: Ch3 * dc 3, dec on next 2 sts; rep from * around, ending dc on any extra sts. Work 1 rnd even.

2nd Dec Rnd: Ch 3 * dc 2, dec on next 2 sts; rep from * around, ending dc any extra sts. Work 1 rnd even.

3rd Dec Rnd: Ch 3 * dc 1, dec on next 2 sts, rep from 1 ending dc any extra sts. Work 1 rnd even.

4th Dec Rnd: Ch 3 * dec on next 2 sts; rep from * around, ending dc any extra sts. Draw together remaining sts and fasten off securely.

Knitting Pattern

Use #4 needles and baby weight yarn.
Cast on 72 stitches (sts).
Knit (k) 2, Purl (p) 2 or 3 inches.
K the next 2 rows to make a ridge on the right side.
P one row.
Work in Stockinette Stitch (st st; k one row, p one row) for 14 rows.
K the next 2 rows to make another ridge.
P one row. Next row: k2 together (tog) across row.
Repeat the last two rows until you have 9 sts remaining on the needle.
Leave a strand of yarn long enough to weave the back seam together, draw the strand through the 9 sts and fasten.
Weave the back seam together.
To make any of these models, double the size of the pattern. If a photocopier is available, enlarge the pattern by 200%. 

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2 To make any of these models, double the size of the pattern. If a photocopier is available, enlarge the pattern by 200%.